SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag.ca.gov

MEETING OF THE

AVIATION TECHNICAL ADVISORY COMMITTEE

Thursday, October 27th 2011
10:00 a.m.-12 Noon

Policy Room A
Southern California Association of Governments

818 West Seventh Street, 12th Floor
Los Angeles, CA 90017

213-236-1800

Agenda Enclosed

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Michael Armstrong at 213-236-1914 or armstron@scag.ca.gov

Agendas and Minutes for the Aviation Technical Advisory Committee are also available at: http://www.scag.ca.gov/aviation/index.htm

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. If you require such assistance, please contact SCAG at (213) 236-1868 at least 72 hours in advance of the meeting to enable SCAG to make reasonable arrangements. To request documents related to this document in an alternative format, please contact (213) 236-1868.

AVIATION TECHNICAL ADVISORY COMMITTEE
AGENDA

			PAGE #	Time
	"Any item listed on the agenda (action or information may be *acted upon at the discretion of the Committee"*			
1.0	**CALL TO ORDER**	**Chris Kunze, ATAC Chair**		
2.0	**WELCOME AND INTRODUCTIONS**			
3.0	**PUBLIC COMMENT PERIOD**			
	Members of the public desiring to speak on an agenda item or items not on the agenda, but within the purview of this committee, must notify the Chair and fill out a speaker's card prior to speaking. Comments will be limited to three minutes and the Chair may limit the total time for comments to 20 minutes.			
4.0	**CONSENT CALENDAR**			
4.1	Approval of Meeting Minutes from September 22, 2011 **Attachment**		**1**	
4.2	ATAC Membership List and Contact Information **Attachment**		**17**	
5.0	**PROJECT REVIEW** None			
6.0	**INFORMATION ITEMS**			
6.1	Approval of Regional Aviation Demand Forecast and Regional Aviation Policies by the SCAG 2012 Regional Transportation Plan (RTP) Subcommittee **Attachment**	**Mike Armstrong** **SCAG Staff**	**19**	**10 min.**
7.0	**ACTION ITEMS**			
7.1	Regional General Aviation Demand Forecast for 2012 RTP **Attachment under separate cover**	**Geoff Gosling** **SCAG Consultant**		**30 min.**

AVIATION TECHNICAL ADVISORY COMMITTEE

AGENDA

			PAGE #	Time
7.0	**ACTION ITEMS (Cont'd)**			
7.2	Regional Air Cargo Demand Forecast for 2012 RTP **Attachment**	**Geoff Gosling** **SCAG Consultant**	**44**	**15 min.**
7.3	Regional Aviation Policies And Action Steps for 2012 RTP **Attachment**	**Mike Armstrong** **SCAG Staff** **Geoff Gosling** **SCAG Consultant**	**56**	**40 min.**

8.0 MISCELLANEOUS ITEMS/ANNOUNCEMENTS

9.0 FUTURE AGENDA ITEMS

Any committee members of staff desiring to place Items on a future agenda may make such a request. Comments should be limited to three minutes.

10.0 SET NEXT MEETING LOCATION

11.0 ADJOURNMENT

Aviation Technical Advisory Committee
September 22, 2011
Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF THE MEETING OF THE AVIATION TECHNICAL ADVISORY COMMITTEE. AN AUDIO DIGITAL FILE OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING AT SCAG'S OFFICE.

The Aviation Technical Advisory Committee of the Southern California Association of Governments held its meeting at the Sky Room, Bob Hope Airport, 2627 North Hollywood Way, Burbank, CA 91505. The meeting was called to order by Mr. Chris Kunze, ATAC Chair and Staff Advisor, Long Beach Airport.

ATAC Members Present:

Diego Alvarez	LAWA
Selena Birk	LAWA
Lea Choum	John Wayne Airport
Gary Gosliga	March Inland Port Airport Authority
Mark Hardyment	Bob Hope Airport
Chris Kunze	Long Beach Airport
Todd McNamee	County of Ventura, Department of Airports
Richard Smith	County of Los Angeles, Aviation Division

Others Present:

Richard Ayala	City of Ontario
Keith Downs	Mead & Hunt
Norm Emerson	Emerson & Associates
Mario Fabila	Long Beach Airport
Geoff Gosling	Aviation System Consulting
Bob Huddy	OLDA
Mustapha Janneh	IGT
Lorena Mejia	City of Ontario
Roger Moog	Delaware Valley Regional Planning Commission (retired)
Richard Norton	URS Corporation
Allyn Rifkin	OLDA
Bob Rodine	The Polaris Group
Mike Armstrong	SCAG

1.0 CALL TO ORDER

Chris Kunze, Chair, called the meeting to order at 10:05 a.m.

2.0 WELCOME AND INTRODUCTIONS

Mark Hardyment, Director of Environmental Programs at Bob Hope Airport, welcomed ATAC members on behalf of Bob Hope Airport senior staff and airport commissioners. He gave a PowerPoint presentation on the history of Bob Hope Airport from its opening in 1930 to the present.

3.0 PUBLIC COMMENT PERIOD

There were no public comments

4.0 CONSENT CALENDAR

4.1 Approval of Meeting Minutes from July 28, 2011

Chris Kunze remarked that the minutes were excellent and he couldn't find any mistakes. The minutes were approved with no changes.

4.2 ATAC Membership List and Contact Information

No changes were made.

5.0 PROJECT REVIEW - None

6.0 INFORMATION ITEMS

6.1 Status of Bob Hope Airport's Regional Intermodal Transportation Center and Airport Development Agreement with the City of Burbank

Mark Hardyment overviewed the status of Bob Hope Airport's Regional Intermodal Transportation Center (RITC) and airport ground access study. The airport is bounded by rail lines to the north and south, with an airport stop on the Ventura Line. However, the closest stop on the Antelope Valley Line to the north is in Sun Valley. They are embarking on a ground access study to look at more convenient transportation/intermodal connections to the airport. The study is being funded by a $4.3 million grant (an old highway grant turned into an ISTEA grant), about 40% of which will be used to fund the study. The intent is to use the remaining funds for design and possibly hard construction once the ground access study is complete. An objective the airport authority wants to accomplish by the project is increased connectivity in the corridor extending to Santa Clarita (and possibly out to Palmdale) and down to Union Station, with strategic stops in between. Another objective is to reduce traffic on Hollywood Way, and increase connectivity between the San Fernando Valley and the San Gabriel Valley.

Mr. Hardyment noted that there are some funding concerns for the study related to the 20% required sponsor match and the economic downturn, as well as restriction on the use of airport authority funds for off-airport projects. For this fiscal year a total of $500,000 has been allocated, with $100,000 of that coming from the airport.

Mr. Hardyment noted that one of the factors driving the RITC is the fact that the FAA has given the airport until 2015 to close down the rental car ready return lot since it lies within the runway safety protection area. The planned new consolidated rental car facility (funded by charges on rental cars) will be a three-story structure, with a bridge across Empire Avenue connecting to the airport train station. An elevated moving sidewalk will connect the facility with the terminals. The proposed transit area has been moved from the third floor to ground level, which will save a tremendous amount of money, and made Metro an interested party in providing service by eliminating potential operational and logistics problems.

Mr. Hardyment then provided an update on the status of the airport's development agreement with the City of Burbank. A three year extension of the development agreement has recently been approved by the City of Burbank. This latest amendment of the development agreement will allow the airport authority to begin discussions with the city on a 14-gate replacement terminal facility (that would ultimately be subject to voter approval). The number of terminal gates would be the same, but the terminal square footage would be increased slightly.

Chris Kunze asked what airport capacity and activity assumptions were being used for the ground access study. Mr. Hardyment replied that they were at the very beginning of the study and that has not yet been determined. Current airport and transit service levels will provide the baseline. The RITC is driven by an FAA mandate to close down the existing rental car ready return lot. However bids for the RITC that they have received are well over budget, and if that holds they will likely have to down scope the facility from the design currently proposed. Mike Armstrong added that SCAG's 2035 forecast/capacity constraint of 9.4 MAP for Bob Hope Airport is consistent with a 14 gate terminal facility. Mr. Kunze surmised that Metro and other service providers might be interested in the planning assumptions, whether you are assuming 4 MAP or 9 MAP. Mr. Hardyment agreed, but said it was too early in the process to identify numbers right now. He added that the Bob Hope Airport had been pursuing a mandatory curfew through a Part 161 process that precluded the airport from doing a Part 150 update, so they have been using a Part 150 study that dates to 1998 and included a forecast to only 2003. They have recently received a grant and selected a consultant to do a Part 150 update that will also update the airport's forecast. It was asked whether the airport has been involved in the proposed grade separation along the Metrolink line just to the west of the RITC. Mr. Hardyment responded that the City of Burbank has the funding to do a feasibility study for the project, but currently there is no funding for construction.

Chris Kunze commented that what the airport is doing is a good proof of concept for what SCAG has talking about for some time in terms of multimodal access to airports. The basic concept could be applied to other airports in the region such as Ontario. It if would be helpful for the airport authority to have a letter from SCAG supporting the proof of concept he would be happy to see that it was done. Mr. Hardyment thanked Mr. Kunze for the offer, and commented that the concept is also consistent with the multimodal emphasis in FAA's Vision 100 Reauthorization Act.

6.2 Status of FAA Metroplex Airspace Optimization in the SCAG Region

Chris Kunze remarked that he attended the the August 11 kick-off meeting of the FAA's Optimization of Airspace and Procedures in the Metroplex (OAPM) program for Southern California. At that meeting almost everyone from the FAA study team was from outside the region. The FAA claimed this was because of the experience gained from other OAPM projects completed around the country, and it also allows for a fresh approach to be taken. The position of local representatives at the meeting was that this was fine, but you also have many years of airspace experience among ATAC and Southern California Airspace Users Working Group (SCAUWG) members who have worked on many airspace modifications in the region and know the local airspace issues, who should not be ignored. Representatives at the meeting strongly recommended that the study team do more outreach with ATAC and the SCAUWG, and meet periodically with Pat Carey who will likely be the new chair of the SCAUWG. Mike Phipps of the study team seemed interested in doing this.

Mr. Kunze said that the study team indicated that they are not interested in taking on major airspace redesign issues that will take longer than three years to implement. They are basically interested in cherry picking fixes to problems using NextGen opportunities and solutions that won't require a time consuming and expensive EIS. Mr. Kunze added that he talked to Mr. Phipps about specific issues they have at Long Beach, including issues that are driving the reclassification of Class B to Class C airspace that could easily be addressed with some NextGen applications that would have positive environmental benefits. Mr. Kunze recommended airport operators should make contact with Mr. Phipps (his contact information is included in the attachment on the OAPM study in the current agenda packet) to get on his mailing list, and mention any specific issues that they want the OAPM study team to look at. Mr. Kunze reported that at the kick-off meeting he had urged the study team to consider the SCAG aviation demand forecast and not just look at current issues, because some airports like Ontario and San Bernardino may not have significant airspace problems and issues now but could very well 20-30 years from now. Mike Armstrong added that he sent them the regional airspace study that SCAG did several years ago that did look at potential airspace issues associated with the 2035 forecast.

Mr. Kunze announced that there is another OAPM meeting scheduled for September 27 at the FAA regional headquarters. At that meeting the study team will discuss a preliminary list of airspace issues they intend to address over the next three years.

6.3 Summary of 8/25/11 Meeting with Long Beach Councilman James Johnson's Staff and SCAQMD Staff on Aviation Air Quality Impact Issues

Chris Kunze summarized a recent meeting his staff, as well as SCAG staff and staff from the South Coast Air Quality Management District (SCAQMD) had with Long Beach Councilman James Johnson's staff on aviation air quality issues. The reason for the meeting was unclear, although it might have had something to do with a Prop. 65 lawsuit that named 26 airports and their fuel providers as violators of the proposition in terms of lead exposure. At this meeting, the results of a recent EIR that was done at Long Beach Airport was discussed, which showed no exceedances of the lead standard around the airport indicated by the modeling. Another study showed that dirt between the taxiways had less lead content than standards for residential areas. Mr. Kunze remarked that Santa Monica Airport was also discussed in terms of recent lead monitoring in nearby residential areas that showed no exceedances of state or federal standards. Aviation industry issues were also discussed in terms of the safety and economic implications of stopping the sale of leaded avgas, and the fact that the industry was dealing with the problem with discussions underway with the FAA and EPA to develop an implementation plan to phase our leaded avgas. A plan is expected by January of 2012, and the issue is being dealt with on a rational basis. This is a federal issue, and because of this a group of FBOs and fuel providers have hired legal counsel to challenge the lawsuit. The issue will be heard in a federal district court in the near future to determine whether it is strictly a federal issue.

Mr. Kunze stated that he didn't know if this was going to grow into a larger issue. Mike Armstrong replied that Councilman Johnson, who is a new member of SCAG, has asked for a presentation on the aviation air quality issue to the SCAG Environmental Committee. It is unclear right now exactly what Councilman Johnson wants, but apparently he wants SCAG to pick up this ball and run with it. On the bright side of this issue, SCAG provides growth forecasts to the SCAQMD for the development of forecast aviation emission inventories for the air quality management plan (AQMP). For the 2012 AQMP revisions for ozone and PM2.5, the aviation activity growth rates for the 2012 RTP aviation forecast should be substantially lower than in the past, which will lower forecast emissions. Also, SCAG has recently provided to the SCAQMD 2035 operational forecasts for the Constrained Scenario that incorporate assumptions about aircraft fleet turnover to cleaner and quieter aircraft (the SCAQMD didn't use these forecasts for the 2008 AQMP, and just applied the growth factors to the baseline emission inventories). Use of these operational forecasts to develop forecast emission inventories for the 2012 AQMP revisions should also lower forecast aviation-related emissions, and reduce emission reduction burdens for meeting ambient air quality standards.

Chris Kunze asked what kind of environmental review will be done for the aviation system plan update for the 2012 RTP. Mike Armstrong responded that for the 2008 RTP, since the forecasts for all airports were either the same or less than forecasts for the 2004 RTP, the environmental document for the 2004 RTP was used since its identified noise and air quality impacts would not be exceeded. SCAG will likely take the same approach with the 2012 RTP since the situation will be the same. Emissions associated with new general aviation forecasts being developed for the 2012 RTP will likely also be lower than what was assessed in the 2004 RTP, since general aviation forecasts haven't been developed since 2003 (based on a 2001 GA inventory) and the new forecasts will likely be substantially lower.

Bob Rodine remarked he was worried about the Long Beach Airport situation in the context of the Santa Monica Airport air quality study, where a mile from the runway threshold they found substantial amounts of lead on window sills and roofs. He expressed concern that turbine aircraft are getting newer and cleaner, but piston aircraft aren't. If this isn't taken into account in the forecast it will imply a continuation of substantial lead emissions dropped on communities, and we should get ready for the possible backlash. Chris Kunze responded that the formal study report from the SCAQMD showed no impacts in residential areas above any recognized standards (Mr. Rodine asked for a citation for this report). Todd McNamee added that he recently read that a group of 27 senators is urging the EPA to restrain from an early ban on leaded fuel until they find an alternative.

6.4 Update on Regional General Aviation Demand Forecasts for 2012 RTP

Geoff Gosling presented an update on his work in updating the regional general aviation demand forecasts, including the main assumptions that will be used to generate the forecasts, picking up where he left off at the last meeting. Dr. Gosling first remarked that the development of the general aviation cohort analysis requires data on composition of the pilot community, pilot attrition rates by age, transition rates to higher pilot certificate levels, and new pilot starts. Data on composition of the pilot community come from two sources: the FAA U.S. Civil Airmen Statistics, and the FAA Airmen Registration Database (public subset). The former provides national statistics of active pilot by age group, from which attrition and transition rates among the different age groups can be inferred. The latter data source provides more detailed information at the individual pilot level including pilot address and certificates held and date of medical certificate. Dr. Gosling explained that pilot attrition rates by age can be calculated from an analysis of the change in the size of the five-year age cohort over five years. Transition to a higher level of pilot certificate is based on the number of new certificates issued. Attrition is the difference between the change in the number of pilots with a given certificate within a given age range and those that transition to higher certificate levels.

Dr. Gosling then presented a graph of representative pilot attrition rates for private pilots, showing that attrition rates increase as pilot get older, exceeding 50% after age 65. For transition rates to higher levels of pilot certificate, the transition rate for private pilot to commercial pilot peaks at the 20-24 age group cohort (at 50%), and decreases in older age group cohorts.

For new pilot starts, Dr. Gosling presented a chart that shows that from 2000 to 2010, pilot student starts have been fairly constant with a slight declining trend. Private pilot starts have gone down at a steeper rate over this period, with a decreasing percentage of student pilots becoming private pilots. In terms of new pilot starts per 100,000 people, there is a more obvious declining trend (although new starts have been increasing relative to GDP per capita over this period). Forecasts for new pilot starts will depend on what is assumed for future population growth and GDP.

Besides the composition of the pilot community, Dr. Gosling explained that the GA forecast will depend on recent trends in aircraft flight activity and composition of the active aircraft fleets, and how those trends might be affected by future economic conditions, fuel prices and demand for commercial and airline pilots. Overall, average flight hours per aircraft have been declining for all types of GA aircraft (except for piston helicopters) mainly because aircraft utilization declines with age and the aircraft fleet has been getting older. Declining utilization rates of jet aircraft since 1998 relate more to economic cycles. In terms of the composition of the active aircraft fleet by age, Dr. Gosling pointed out that the bulk of the single-engine and multi-engine fleet is more than 30 years old. The jet and turboprop fleet as well as experimental aircraft fleet has been growing rapidly over the last few years.

For the single-engine piston aircraft feet, Dr. Gosling said that the percentage of inactive aircraft increases steadily as the aircraft get older, with almost half of the fleet older than 60 years being inactive. The inactive aircraft still have to be kept somewhere even if they aren't still being used, which has aircraft storage implications for GA airports. Utilization of single-piston aircraft declines steadily as the aircraft get older, as more aircraft are becoming inactive and those that are still active are being flown less with age. So as the piston fleet becomes older and older, the aircraft in the fleet will be flown less and less. There has also been a drop-off of utilization of newer GA aircraft in recent years compared to the 1990's, which reflects the impact of the economic recession mainly on corporate jet aircraft.

For aircraft fleet attrition, Dr. Gosling remarked that aircraft often become inactive long before they are scrapped. Active aircraft and inactive aircraft drop out of the fleet at pretty much the same rates with age. Also, attrition rates are higher for younger aircraft and go down as aircraft get older, probably because once an aircraft reaches a certain age the likelihood of it becoming scrapped is much less.

Dr. Gosling stopped his presentation at the forecast assumptions because time was running short. Mike Armstrong remarked that ATAC needs to approve a new GA forecast at its next meeting because the Draft 2012 RTP will be released in early December. He suggested that ATAC should consider the different forecast assumptions before selecting a new forecast. Dr. Gosling then went through the assumptions very quickly and the different assumption scenarios that can be considered. These include:

1. The cost of flying (ranging from a constant cost in real dollars, to an increase according to the U.S. Energy Information Administration projections, to an increase in all costs proportional to fuel price)
2. New pilot starts (ranging from a continuation of the recent relationship between pilot start and gross domestic product (GDP), to an increase proportional to GDP per capita, to an increase proportional to projected demand for commercial and airline pilots)
3. Pilot transition/attrition (ranging from a continuation of the recent transition and attrition relationships, to a change in the relationships proportional to the change in the cost of flying, to a change in the relationships proportional to the projected change in the demand for commercial and airline pilots)
4. Annual flight hours (ranging from continuation of relationship from AOPA survey, to continuation of declining trend from past 10 years, to increase in relationship to eliminate recent reduction due to 2009 recession)
5. Aircraft fleet attrition (ranging from a continuation of the recent attrition rates, to an increase in attrition rates proportional to the projected change in the cost of flying, to a change in attrition rates proportional to the projected change in overall flight activity/hours flown).

Dr. Gosling noted that once the assumptions are chosen and fed into the pilot cohort model, estimates of changes in annual flight activity will be developed, and the aircraft fleet and replacement model can be applied to the current based aircraft fleet to generate forecasts of based aircraft. Estimates of activity of visiting aircraft will also be needed, from data supplied by individual airports to develop new operational forecasts.

Chris Kunze noted that there are many different options and a lot of different data on the table for developing the new GA forecasts, and there is a schedule that SCAG has to meet for adopting the forecasts so time is running short. This information should be made available to everyone, and input on the information should be submitted over the next several weeks. In the end we will have to use our best judgment to come up with a new forecast. Bob Rodine suggested that another element that could be considered is the fact that massive numbers of pilots who flew in WW II got their pilot licenses, and many others got their licenses from the GI Bill, which ended in 1974. Also, two changes in the tax code in 1981 and 1986 limited deductions of aviation expenses and aviation investment tax credits, which had an impact on flying

hours and aircraft purchasing. Also, legal changes in aircraft liability in 1996 brought the sale of GA aircraft back to life. Geoff Gosling responded that the effect of all of these factors can be seen in the profile of aircraft by age. They are driving factors for why there is such a large number of older planes, although they don't impact pilot attrition rates for the forecast as much since most of those folks are now over 60. Mr. Rodine added that new Cessna aircraft cost around $300,000 these days which is affecting the capacity to add pilots. Dr. Gosling added that this may also explain the declining attrition rates for older aircraft since they are more affordable than newer aircraft. Todd McNamee suggested that the higher attrition rates for the newer aircraft might be because they are bought by wealthy pilots without a long piloting history and the aircraft don't survive as long. Dr. Gosling responded that this may be a factor, but the attrition rate is a lot higher than the accident rate for new aircraft.

Selena Birk asked about inactive aircraft and how many become active again. Geoff Gosling responded that unfortunately it is impossible to tell from the FAA data, which just gives you a snapshot in time and doesn't follow individual aircraft. Ms. Birk added that people with inactive aircraft don't want to pay the going rates for active aircraft, and airport planning is challenging without knowing what is happening to the aircraft fleet. Dr. Gosling responded that there are a number of questions like this that deserve further research in the future, if we can get access to more refined/individual data. Roger Moog commented that the largest part of the GA forecast on the East Coast that affects airport capacity relates to business/corporate GA. Is that being divided out in the forecast? Dr. Gosling responded that it is, but in this first phase of the study only to the level of the aircraft class, such as single engine piston or jet. The second phase of the study, if it is funded, will look at the composition of the fleet in more detail including the type of aircraft. Mike Armstrong added that the second phase of the study will also produce an allocation to airports that we won't have for the 2012 RTP, although we will develop forecasts at the county level.

Mr. Armstrong asked Dr. Gosling if it was possible to produce some kind of forecast range for the next ATAC meeting. Dr. Gosling responded that a baseline case could be produced, as well as positive (high) and negative (low) scenarios, assuming all of the positive effects or negative effects happen at the same time, to develop boundaries for the forecast range. Mr. Armstrong suggested that ATAC could then have high, medium and low forecasts to choose from at the next meeting in approving a new GA forecast for the 2012 RTP. Todd McNamee suggested that we also have a fourth number, the FAA's TAF, to compare to the other numbers.

6.5 Draft Issue Papers on Regional Aviation Policy Issues for 2012 RTP

Mike Armstrong said that Geoff Gosling is in the process of developing a series of issue papers on regional aviation policies issues that have already been identified and prioritized by ATAC at previous meetings. These issue papers will provide the basis

and foundation for a new Regional Aviation Strategy for the 2012 RTP, with a new set of policies and action steps that ATAC can consider at the next meeting for approval. They will also help set priorities for future work for the SCAG aviation program, beyond the 2012 RTP. Diego Alvarez asked whether the issues papers will be part of the 2012RTP. Mr. Armstrong replied that they provide the basis for discussions leading to new aviation policies for the 2012 RTP, but will not be part of that document.

Geoff Gosling briefly reviewed the first issue paper, on regional aviation demand forecasts. Regional air passenger activity since 1995 has increased only slightly, with non-LAX airport increasing their share of air passenger activity from 2003 to 2007, and losing share to LAX from 2007 to 2010. Regional air cargo activity decreased substantially over the last 10 years, but increased from 2009 to 2010. About three-quarters of the region's air cargo is handled by LAX. For general aviation, while operations have been declining in the region over the last 10 years, based aircraft have been relatively constant up until the last few years when the number of single engine propeller aircraft started to decline.

Dr. Gosling went on to note that policy issues related to ongoing trends in the aviation industry, incentives to encourage airlines to increase service at secondary airports, and limitations of the regional aviation system have been discussed at previous ATAC meetings and are discussed in the issue paper. The issue of allocation of forecast regional aviation demand to airports is a key element of the regional aviation forecasting process. It needs to reflect economic and operational realities, and ideally should be responsive to policy actions and project implementation decisions at airports that affect airline service and air passenger decisions. Dr. Gosling commented that it would be highly desirable for SCAG to develop an in-house aviation demand modeling capability that could provide transparent analysis of policy and project decisions, and provide linkage to ground transportation models.

Dr. Gosling remarked that in modeling capacity-constrained airports, it is necessary to understand what actions will be taken to limit the growth at those airports. For example, whether the reduction in the number of gates at LAX specified in the Settlement Agreement would be sufficient to achieve the airport's policy limit of 78.9 MAP is an issue that the modeling process would need to address. Another issue that deserves more attention is the cost consequences of actions that shift demand to less congested airports in the region. If airlines are limited in the flights they can offer at some airports or if travelers are limited in choices available to them, then fares will likely rise at congested/constrained airports. Also, travelers forced to use more distant airports will bear the added costs of getting to those airports.

Dr. Gosling then presented a list of suggested regional aviation policies that respond to the identified regional aviation issues. These include:

1. SCAG should work with the region's airport authorities to better define the factors that influence the growth in demand for air travel and the composition of the market. There is a need for a region-wide air passenger survey on an ongoing basis to identify the effects of changes in regional air service patterns on the passenger market served by each airport.
2. SCAG needs to develop on-house modeling tools to support the development of future forecasts and the allocation of demand to airports (responsive to potential actions by airport authorities and others to manage demand)
3. SCAG should establish a regional airport ground access task force to define potential programs and services to improve airport accessibility to uncongested airports (to make them more attractive to both airlines and passengers) and reduce vehicle traffic generated by larger airports. The task force should be actively involved in planning to extend or improve rail services in the region, and should explore and develop potential funding sources to support improvements to regional airport accessibility.
4. SCAG should develop a regional consensus on how best to support the development of new air services at uncongested airports. This could include identifying funding mechanisms to encourage airlines to provide new air service, and advocating changes in federal regulations to allow joint programs between airport authorities to support measures to shift regional demand from congested to uncongested airports.
5. SCAG should work with the region's airport authorities and business community to defined a region-wide marketing effort to promote alternatives to increased use of congested airports

Dr. Gosling pointed out the three primary San Francisco Bay Area airports, San Francisco International, Oakland International and Mineta San Jose International (SFO, OAK and SFC), are currently looking into regional airport marketing programs, since SFO is likely to run out of capacity before the other two airports. All three airports have agreed that it would be desirable to shift future growth in domestic traffic from SFO to OAK and SJC, so that SFO can expand its ability to handle international traffic without being constrained by domestic traffic.

Chris Kunze commented that the issue paper mentions three legal agreements that establish capacity limits that are expected to remain in effect through 2035 at Long Beach, John Wayne and Bob Hope airports. However, he didn't know of any legal limits at Bob Hope. Mike Armstrong replied that Bob Hope has no legal agreement, and the settlement agreement at John Wayne expires in 2015 (with the curfew extending through 2020). Dr. Gosling agreed that the paper needs to be revised accordingly. Mr. Kunze then remarked that there has been general support for regionalization, but at the individual airport level there has been resistance to giving financial support to other airports, so the policies should be carefully worded and should emphasize voluntary approaches. Dr. Gosling responded that it should be recognized that positions being adopted under current air traffic conditions may be

different from those adopted under different conditions. In the Bay Area SFO had come to appreciate that it is not in their interest to have their limited capacity used up by domestic traffic if this would mean that they would need to turn away more lucrative international traffic. Hence there has been a change in the dialogue going on at the regional level compared to ten years ago, when there wasn't much chance that SFO would have agreed to consider actions to shift traffic growth to other airports. If one considers the potential situation in the Southern California Region looking out 25 years instead of 10 years, it isn't too early to be thinking about these issues on a regional basis.

Bob Rodine remarked that there is a similar situation in the region between LAX and Van Nuys. Van Nuys is a designated reliever for LAX and helps relieve LAX by serving 305,000 operations per year. Unfortunately, there is an economics issue between the two airports in that Van Nuys was operating at an accounting deficit and LAWA was attempting to raise charges for LAX users through increased landing fees etc. Those users objected to the apparent subsidy of Van Nuys and wanted rates to be raised there so that rate increases at LAX could be alleviated.

7.0 ACTION ITEMS

7.1 Regional Aviation Demand Forecast Scenario for 2012 RTP

Mike Armstrong said that at the last three meetings the committee discussed and deliberated at length on three different 2035 regional aviation demand forecast scenarios for potential adoption for the 2012 RTP. These include a Low Growth Scenario of 130 million air passengers (MAP), a Medium Growth/Baseline Scenario of 145.9 MAP that is almost identical to the Constrained/No Project Scenario in the 2008 RTP, and a High Growth Scenario of 164 MAP. The High Growth Scenario is consistent with recent FAA and aviation industry forecasts, and the Low Growth and Baseline scenarios are significantly lower than those forecasts, but are generally consistent with forecast recently developed by other planning agencies in California, in the San Francisco Bay Area and San Diego.

Mike Armstrong asked Gary Gosliga to say a few words about the recent action his board (the March Joint Powers Commission) took on one of the scenarios. Mr. Gosliga remarked that March Inland Port (MIP) forecast was 8 MAP in one of the scenarios in the 2008 RTP, and he had discussesed this issue with SCAG staff. The allocation to MIP was subsequently brought down to 2.5 MAP, consistent with the operational limits in their joint use agreement with the Air Force, although the March Commission still had concerns about that number. Recently Mr. Gosliga advised his board about ATAC's recommendations for the three forecast scenarios for the 2012 RTP. The March Commission was pleasantly surprised about the allocation of 0.6 MAP to MIP in the Baseline Scenario, rather than 2.5 MAP adopted for MIP in the 2008 RTP. They have recently been obligated to open the base to the public for

general aviation operations, so that will impact their allowable civilian operations under their joint use agreement. The 0.6 MAP number was endorsed by the March Commission, who instructed Mr. Gosliga to support that number at this meeting. All of the scenarios were published in the local newspaper, which Mr. Gosliga said was not his intention.

Mike Armstrong noted that the action taken by the March Commission is consistent with the staff recommendation to approve the 2035 Baseline Scenario for the 2012 RTP. This is an important issue since staff will be taking the ATAC recommendation to the 2012 RTP Subcommittee, which is chaired by City of Ontario Councilman Alan Wapner, in two weeks. As previously discussed, the Baseline Scenario has the added benefit of having modeled data outputs including trip tables and operations that can be provided to the SCAQMD for the 2012 AQMP updates for ozone and PM2.5, since it was a scenario modeled for the 2008 RTP. The other two scenarios (Low Growth and High Growth scenarios) do not have such data outputs.

Mark Hardyment remarked that he had concerns about the allocation to Bob Hope (9.4 MAP) in the Baseline Scenario. The number comes from an earlier forecast that was a reduction from a 10.7 MAP allocation that assumed two remote parking positions that were deleted. The economic recession lost the airport ten years of growth, and they are back to 2001 numbers. The FAA Terminal Area Forecast (TAF) doesn't show the airport getting back to 2007 numbers until 2030, which he hopes isn't right but nevertheless it is another number that is out there. Given the political sensitivities, Mr. Hardyment questioned the basis for the 9.4 MAP forecast for Bob Hope given that the airport is at 4.5 MAP now with no end in sight to the economic downturn. Mike Armstrong responded that it is a legitimate issue whether some airports will actually reach these forecast numbers. The TAF assumed an unconstrained LAX which likely had an effect on the TAF forecast for Bob Hope. Many of these numbers could be caveated, such as the fact that the settlement agreement constraints at LAX and John Wayne expire in 2020 and 2015, respectively. However SCAG can't second guess what the constraints might be after those dates. If the LAX Settlement Agreement constraint expires it would certainly effect the allocation to BUR, which was driven by the 78.9 MAP cap at LAX. Mr. Armstrong noted that SCAG has done unconstrained modeling of LAX, which became a "black hole" for demand because of its large number of flights and airline competition. If SCAG develops in-house modeling capabilities as suggested by Geoff Gosling, and if we change some of the assumptions about capacity constraints we could have a very different forecast allocation for future RTPs.

Mark Hardyment remarked that Ontario is also about 4.5 MAP now and the forecast is for 30 MAP, what is the explanation for a more than six-fold growth? Selena Birk added that Ontario has had no growth trend over the last five years, and she questioned the allocation to Palmdale as well. Chris Kunze commented that the allocations are driven by the 145.9 MAP total in 2035, or somewhat less than twice

what we have today (81 MAP). If that happens, the Baseline Scenario could be reasonable—the FAA TAF for this region has a higher overall growth rate. This region has had no net growth over the last 12 years, but the Washington and New York regions have seen a 36% and 20% growth in passengers, respectively, over the same period. This region could see a 2% or 3% annual growth rate in the future even though we haven't in the recent past. The good thing is that we revisit the RTP every four years so as things evolve we can take them into account and make changes to the forecast. The Baseline Forecast is our best guess at this point, but there are a lot of variables and we should place a number of appropriate caveats on it including the fact that it is updated every four years. Mr. Kunze recommended that ATAC approve the Baseline Scenario with the condition that there is a lot of debate about the forecast variables and they need to be periodically revisited for reality checks. Mike Armstrong added that it also depends on the successful implementation of ground access projects to be able to decentralize the system to airports that have the capacity to serve future demand. If bad economic conditions continue or deepen, for the next RTP SCAG may adopt an even more conservative scenario of around 120-130 MAP, or forecast something like the Baseline Scenario farther out into the future, past 2035.

Diego Alvarez commented that there are two sets of issues that are being conflated a little. One is the total forecast for the region (low, middle or high) and the other is the allocations to airports, and he would be interested in how the description of the allocation part of the forecast is worded in the RTP. Chris Kunz noted that the modeling for the Baseline Scenario is based on constraints assumed at airports as well as other factors including where demand is concentrated in the region. If LAX wasn't constrained to 78.9 MAP, Ontario wouldn't have gone to 30 MAP in the modeling. Mr. Alvarez responded that LAWA would like the opportunity to review how the caveats are worded since every airport understands their constraint better than anyone else. Mike Armstrong replied that ATAC would be able to review the caveats at the next meeting. Todd McNamee asked when the RTP is due. Mr. Armstrong replied that the Draft 2012 RTP will be released in early December, so ATAC has to approve all the remaining pieces of the aviation element at its next meeting in October. Mr. McNamee said that he would support the Baseline Scenario, but only with a description of the variables, otherwise we are relying on an old forecast only because it was modeled for the last RTP. We can also use the recommendation to get aviation modeling support for the next RTP. Mr. Armstrong agreed, saying that SCAG can't continue to revise old model runs for future RTPs. Before SCAG had aviation demand modeling capabilities aviation planners used to just draw circles around airports to estimate the demand in airport "catchment areas," However that just doesn't work very well in this region, which has a complex multi-airport system with overlapping service areas. Things became complicated in the 1990's when a number of potential new airports were introduced to the system from closed or downsized military air bases, and SCAG realized that they needed better forecasting tools. Most MPOs in the country just have one large hub airport which makes forecasting easy, but it is not so easy here because we have a very complex system.

Chris Kunze suggested that ATAC make a conditional recommendation based on these discussions, with a tentative agreement on the Baseline Scenario with caveats attached. Mr. Kunze noted that the purpose of the 2008 RTP forecast was to regionalize, and there was a buy-in on the concept to spread demand to airports like Ontario and San Bernardino. Things really haven't changed, except that the demand by 2035 is less, but you still need to regionalize through policies and ground transportation to serve that demand. Mr. Kunze said that there a lot of variables, but he didn't know that was a better guess than the Baseline Scenario. Projects are implemented at the airport level, and the forecast is just a guide that is updated periodically. Bob Rodine commented that the Southern California Regional Airport Authority (SCRAA) is dead, and most airports are marching to their own drummers because they have their own limitations, so we should avoid suggesting regionalization at all. Mr. Kunze responded that you can call it what you want, but our job is to forecast regional demand and see where it can be accommodated as opposed to not accommodating it. We should respect limits at constrained airports, and see what our best options are for accommodating forecast demand at this time, which could change in the future. Geoff Gosling added that the most important point to make in the caveats is that the forecast is based on current legal and policy limits at airports, and if those limits are relaxed in the future the forecasts will change. The forecast is not making a judgment about whether or not those limits will remain in 2035, it just says that if they aren't changed this is what will likely happen. If LAX, Long Beach and John Wayne are limited to certain amounts, and if you want to accommodate a certain level of regional demand, it has to go somewhere.

Todd McNamee suggested that it should also be pointed out that the Baseline Scenario came from modeling done for the 2008 RTP. Mike Armstrong replied that not much has changed since the 2008 RTP Constrained Scenario was developed. The forecast horizon for the 2012 RTP is the same (2035) and the airport capacity constraints haven't changed. The Constrained Scenario (from which the Baseline Scenario was derived) was the 2008 RTP No Project Scenario that did not assume the maglev high-speed rail system, and was rejected as being too conservative in favor of an adopted 165.3 MAP forecast. However the Constrained Scenarios is much more consistent with recent trends than the 2008 RTP adopted forecast.

Chris Kunze suggested that the caveats to the forecast should mention that the forecast is based on existing policy limits, and variables that historically have changed and need to be watched and updated at least every four years. Also, the Baseline Forecast is based on 2008 RTP assumptions that produced a low growth rate that is consistent with recent trends. Mark Hardyment commented that there currently are no legal or policy constraints at Bob Hope Airport. Mike Armstrong responded that past RADAM model runs that did not assume a 9.4 MAP gate capacity constraint at Bob Hope Airport pushed the airport's allocation up to 12-13 MAP with the assumption of a 78 MAP constraint at LAX. With a constrained LAX,

most un-served demand in the LA Basin had no place else to go except to Bob Hope Airport, which is a good alternative to LAX for many air passengers. Based on past capacity analyses, SCAG feels that 9.4 MAP is a reasonable outside limit to what can be served by the airport's 14 gates.

Bob Huddy commented that there is an officially adopted state high speed rail project that will be included in the 2012 RTP, that the State High Speed Rail Authority says will divert a lot of intra-state air trips from California airports. Chris Kunze replied that given what is going on right now with that project, it is very uncertain when that project will be implemented if ever. Mike Armstrong commented that this project would have been modeled in place of the SCAG maglev system if we had aviation modeling capabilities for the 2012 RTP. The potential impacts of the California High-Speed Rail Project on the forecast should be addressed in another caveat, and modeled when practicable.

A motion was made to conditionally approve the Baseline Scenario forecast for the 2012 RTP with a number of caveats that qualify that the forecast is based on current legal and policy constraints at airports that could change, is based on historic variables that are subject to change and need to be periodically updated, is based on modeling from the 2008 RTP that is consistent with the lower growth rates of current trends, and does not consider the potential impacts of the propose California High-Speed Rail Project. The motion was seconded and approved with several abstentions.

8.0 MISCELLANEOUS ITEMS/ANNOUNCEMENTS

None

9.0 FUTURE AGENDA ITEMS

Future agenda items will include approval of regional air cargo and general aviation forecasts, and regional aviation policies and action steps for the 2012 RTP.

10.0 SET NEXT MEETING LOCATION

The next meeting will be Thursday, October 27 at the SCAG Main Offices.

11.0 ADJOURNMENT

The meeting was adjourned by Chairman Kunze at 12: 35 pm.

AVIATION TECHNICAL ADVISORY COMMITTEE PHONE/FAX/E-MAIL LIST

Last Update: 10/20/2011

MEMBERS:

Last Name	First Name	Title	Affiliation	Phone Number	Fax Number	E-Mail
Arrellano	Yazmin	Director of Public Works	City of Brawley	(760) 344-9222	(760) 344-0907	yazmin.arellano@cityofbrawley.com
Birdsall	Stephen	Director of Airports	Imperial County	(760) 355-7944	(760) 355-2485	stephenbirdsall@imperialcounty.net
Birk	Selena	Airport Manager	LAWA	(424) 646-8030		sbirk@lawa.org
Brodeur	Richard	Manager	Corona Municipal Airport	(941) 736-2289		richard.brodeur@ci.corona.ca.us
Burkhart	Dan	Director, Regional Programs	NBAA	(760) 749-6303	(760) 695-8755	dburkhart@nbaa.org
Cable	Bob	Manager	Cable Airport	(909) 982-6021		bob@cableairport.com
Castillo	Ruben		Blythe Airport	(760) 921-7812	(760) 921-7812	
Crimmins	Phil		Caltrans Aeronautics	(916) 654-6223		Phillip.crimmins@dot.ca.gov
DeMel	Rick	Airport Manager	Yucca Valley Airport	(760) 360-9665	(619) 228-1234	no email yet
Doiron	Leo	Airport Manager	Flabob Airport	(951) 683-2309	(909) 687-0113	leo_flabob@sbcglobal.net
Dykas	Richard	Supervisor	FAA, Western Pacific Region	(310) 725-3613	(310) 297-0044	richard.dykas@faa.gov
Estrada	Luis	Airport Manager	Calexico International Airport	(760) 768-2175	(760) 357-0739	lestradasr@yahoo.com
Field	Rob	Airport Manager	Chiriaco Summit/French Valley Arpt	(951) 343-5493	(760) 863-5251	
Gosliga	Gary	Airport Director	March Joint Powers Authority	(951) 656-7000	(951) 653-5558	gosliga@marchjpa.com
Hardyment	Mark	Dir. Of Env. Programs	Bob Hope Airport	(818) 840-8840		mhardyment@bur.org
Hawken	Chanelle	Govt. Relations Spec.	San Diego County Reg. Airport Auth.	(619) 400-2899	(619) 400-2896	chawkens@san.org
Ingraham	William	Aviation Director	San Bernardino Int'l Airport	(909) 382-4100 X 251	(909) 382-4106	bingraham@sbdairport.com
Jenkins	James	Assistant Director	San Bernardino Co. Airports	(909) 387-8816		jjenkins@airports.sbcounty.gov
Kirshner	Barry	Airport Owner	Agua Dulce Airpark	(661) 268-7648	(661)268-7662	Barry@aguadulceairpark.com
Klemm	Richard	Airport Manager	Brawley City	(760) 344-4581	(760) 344-4539	richardklemm@hotmail.com
Kunze	Christopher	Special Advisor	Long Beach Airport	(562) 570-2605	(562) 570-2601	chkunze@ci.long-beach.ca.us
Leblow	Loan	Asst. Airport Director	John Wayne Airport	(949) 252-5192	(949) 252-5178	lleblow@ocair.com
Lin	Shelly	Airport Manager	City of Hawthorne Airport	(310) 970-7215	(310) 970-7075	hhrairport@earthlink.net
Lloyd	Stephen J.	Manager, Air Traffic Ops	FAA, Western Pacific Region	(310) 725-6530	(310) 725-6820	stephen.lloyd@faa.gov
McNamee	Todd	Director of Airports	County of Ventura, Department of Airpor	(805) 388-4200	(805) 388-4366	todd.mcnamee@ventura.org
Mew	Keith	Director, Aviation Admin	Cal. State Univ. Los Angeles	(323) 343-4568		kmew@calstatela.edu
Moritz	Paul	Airport Manager	Catalina Island Airport	(310) 510-0143	(310) 510-3509	pmoritz@catalinaconservancy.org

AVIATION TECHNICAL ADVISORY COMMITTEE PHONE/FAX/E-MAIL LIST

Last Update: 10/20/2011

MEMBERS: Page 2

Last Name	First Name	Title	Affiliation	Phone Number	Fax Number	E-Mail
Neseth	Eric	Airport Manager	Salton Sea Airport	(562) 434-5594		
Nolan	Thomas	Executive Director	Palm Springs International Airport	760-318-3901		Thomas.Nolan@palmsprings-ca.gov
Perez	Paul G.	Regional Plng	Caltrans	(213) 897-1731	(213) 897-1337	paul_g_perez@dot.ca.gov
Powell	Jim		TDG	(808) 280-6047		jim@dgtraining.com
Propst	Rod	Airport Manager	Fullerton Municipal Airport	(714) 738-6323	(714) 738-3112	rodp@ci.fullerton.ca.us
Richardson	Park W.	Airport Manager	Hi Desert Airport	(760) 366-2281		
Rigoni	Kari	Airport Planner	John Wayne Airport	(949) 252-5284	(949) 252-5178	KRigoni@ocair.com
Rowena	Mason	Airport Manager	Santa Paula Airport	(805) 933-1155	(805) 933-1155	rowenaszp@yahoo.com
Santos	Barbara	Executive Director	Riverside County Airports	(951) 343-5493	(909) 688-6873	bsantos@rivcoeda.org
Scanlan	Richard	Airport Manager	Rialto Muni/Art Scholl Memorial	(909) 820-2622	(909) 820-2598	rscanlan@rialtoca.gov
Schneider	Gerd	Airport Manager	Hesperia Airport	(760) 948-1177	(760) 948-1177	
Schoetzow	Eileen	City Planning Associate	LAWA	(424) 646-5190	(424) 646-5066	eschoetzow@lawa.org
Smith	Michael	President	Bermuda Dunes Airport	(760) 345-2558	(760) 345-4615	uddmike@aol.com
Smith	Richard	Chief	LA County Aviation Division	(626) 300-4602	(626) 282-1365	rsmith@dpw.lacounty.gov
Smith	Tahirih	District 7	Caltrans	(213) 897-1347	(213) 897-1337	tahirih_n_smith@dot.ca.gov
Taylor	Bonnie	Transportation Assistant	FAA Western Pacific Region	(310) 725-3900	(310) 725-3999	bonnie.taylor@faa.gov
Toor	Paul	Director of Public Works	City of Banning	(909) 922-3130	(909) 922-3128	cobpw@earthlink.net
Trimborn	Bob	Airport Manager	Santa Monica Airport	(310) 458-8591	(310) 391-9996	bob-trimborn@ci.santa-monica.ca.us
Volk	Christopher	Army Representative	FAA, Western Pacific Region	(310) 725-3909	(310) 725-3915	christopher.volk@faa.gov
Williams	Mike	Director of Airports	County of San Bernardino, Department of Airports	(909) 387-8816	(909) 387-8815	mwilliams@airports.sbcounty.gov
Zehr	Steve	Asst. Director of Aviation	Palm Springs International Airport	(760) 318-3800	(760) 318-3815	stevez@ci.palm-springs.ca.us

SCAG STAFF:

Armstrong	Michael	Aviation Progam Mgr.	SCAG	(213) 236-1914	(213) 236-1963	armstron@scag.ca.gov
Thompson	Alan	Senior Planner	SCAG	(213) 236-1940	(213) 236-1963	thompson@scag.ca.gov

MEMO

DATE: October 7, 2011

TO: 2012 Regional Transportation Plan Subcommittee

FROM: Michael Armstrong
Aviation Program Manager
213-236-1914/armstron@scag.ca.gov

SUBJECT: Regional Aviation Demand Forecast Scenarios for 2012 RTP

BACKGROUND

The SCAG Aviation Technical Advisory Committee (ATAC) has approved three alternative 2035 regional air passenger demand forecast scenarios for commercial airports, for potential inclusion in SCAG's 2012 Regional Transportation Plan (RTP). These include baseline/medium growth, low growth, and high growth scenarios. ATAC members agreed that the scenarios present a reasonable range of possible growth rates for commercial aviation in the region over the next 25 years. This memo describes these forecast scenarios, including an allocation of 2035 passenger demand to individual commercial airports for each scenario. It also presents an ATAC recommendation made at its September 22, 2011 meeting for the Baseline Scenario to serve as the Preferred Regional Air Passenger Demand Forecast for the 2012 RTP, with several caveats.

A. Comparison of Regional Air Passenger Demand Forecasts with Other Recent Forecasts

Recent aviation industry air passenger demand forecasts have been reviewed for consistency with the 2035 baseline, high and low growth regional air passenger demand forecast scenarios that were approved by ATAC for inclusion in the 2012 RTP. Those recent forecasts include ones completed by the FAA, Boeing, Airbus, the San Francisco Bay Area (Regional Airport System Plan Analysis) and San Diego County (Regional Aviation Strategic Plan). A comparison of the yearly (per annum) growth rates between these forecasts can be seen below. The combined commercial activity level served by the six air carrier airports in the region in 2010 was 81.48 million annual air passengers (MAP). This is up from the 79.08 MAP they served in 2009, but it is still significantly lower than the 90.06 MAP they served in 2007.

Average Annual Growth Rates of Alternative Passenger Forecast Scenarios

1. Baseline Scenario (145.9 MAP) 2.5% p.a.
2. Low Growth Scenario (130.0 MAP) 2.1% p.a.
3. High Growth Scenario (164.0 MAP) 3.0% p.a.

Average Annual Growth Rates of Recent Industry and Regional Passenger Forecasts

1. FAA Aerospace Forecast 3.2% p.a.
2. Boeing 3.2% p.a.
3. Airbus 2.7% p.a.
4. California regional studies 1.4% to 2.8% p.a.

In general, the annual growth rates of these air passenger forecast scenarios for the SCAG region (baseline/medium growth, high growth and low growth) are somewhat lower than growth rates in forecasts developed by the FAA, Boeing and Airbus, and are generally consistent with growth rates in forecasts developed by the other two regions in California. However, the Low Growth Scenario growth rate is not as low as the lowest growth rates recently considered by the other California regions. Strategically, the upper forecast in the High Growth Scenario is more important than the lower forecast, since the upper forecast determines whether or not the region may run out of airport capacity earlier than was anticipated if it is too low. If it is too high, the forecast can just be pushed farther out into the future when it is updated by the next RTP cycle.

At several ATAC meetings, members debated the reasonableness of the growth rates in the Baseline, High Growth and Low Growth scenarios. In general, the members thought they bracketed a reasonable a reasonable range of possible growth rates for commercial aviation in the region over the next 25 years, which is consistent with other recent forecasts (although the San Francisco Bay Area and San Diego have considered even lower yearly growth rates than what is reflected in the Low Growth Scenario).

B. Descriptions and Allocations for 2035 Baseline, Low Growth and High Growth Regional Air Passenger Demand Forecast Scenarios

1. Baseline/Medium Growth Scenario (145.9 MAP)

The 2035 Baseline Scenario is essentially the same as the 2035 Constrained/No Project Scenario that was modeled and evaluated by the 2008 RTP. The Constrained Scenario was characterized in the 2008 RTP as a very conservative vision for the regional airport system. It assumed no intra-regional maglev high-speed rail system, no market incentives, and very conservative behavior on the part of the airlines in adding flights at new and emerging airports (although all air carrier airports that desire commercial service were allocated some passenger demand even if they currently serve none, which in reality is unlikely, but this scenario did not seek to choose winners and losers). Like the other scenarios in the 2008 RTP, the Constrained Scenario respected existing legally-enforceable policy and physical capacity constraints at urban airports.

In 2003 the legally-enforceable Settlement Agreement at John Wayne Airport was amended to allow it to expand from 8.4 MAP to 10.8 MAP, so this new policy constraint was incorporated in the 2008 RTP Constrained Scenario. A more detailed evaluation of the runway capacity constraint at Ontario Airport raised its capacity constraint from 30.0 MAP to 31.6 MAP. The Bob Hope terminal gate constraint of 10.7 MAP that was used in the 2004 RTP was lowered to 9.4 MAP since Bob Hope Airport staff determined that the four remote aircraft parking gates assumed in the 2004 plan were no longer available for aviation uses. At the request of the March Joint Powers Commission, instead of assuming that March Inland Port was unconstrained, it was considered to be constrained by the 21,000 annual civilian operations allowed in the operative joint use agreement with the Air Force. A RADAM model capacity analysis determined that this constraint equates to 2.5 MAP at March Inland Port, compared to an 8.0 MAP 2030 unconstrained forecast for March in the 2004 RTP. A refined capacity analysis of San Bernardino International's one-runway system produced a runway capacity constraint of 8.7 MAP. Neither March nor San Bernardino reached their capacity constraints in the Constrained Scenario due to its conservative assumptions about future airline air service behavior.

The assumptions and parameters used to model the 2035 Constrained Scenario for the 2008 RTP are as follows:

- LAX: Settlement Agreement: 78.9 MAP
- Bob Hope: Existing terminal/gate capacity: 9.4 MAP
- Long Beach: Flight restriction of 41 air carrier flights/day: 3.2 MAP
- John Wayne: Revised Settlement Agreement: 10.8 MAP
- Ontario: Existing runway capacity: 31.6 MAP
- San Bernardino and Palmdale: Charter, corporate & commuter/short haul
- March and Southern California Logistics: Cargo, charter and corporate
- Oxnard and Imperial: Corporate, charter and commuter only
- Planned (2008 RTP) ground access improvements
- No market incentives
- No high-speed rail (intra-regional Maglev system)
- Doubling of aircraft fuel costs

However, Long Beach Airport reached 3.0 MAP in 2010, and will likely exceed its estimated 3.2 MAP constraint in the near future since it still has most of its 25 available commuter slots yet to be filled. The Terminal Improvement EIR forecast for Long Beach Airport was 4.2 MAP, which was also the forecast for Long Beach Airport in the 2008 RTP adopted Preferred Scenario regional aviation forecast. Therefore, the allocation to Long Beach is increased to 4.2 MAP in the Baseline Scenario, and 1 MAP is subtracted from Ontario and San Bernardino airports on a proportional basis (to keep to the 145.9 MAP total). This is reasonable since the increased service at Long Beach will likely draw from the same Los Angeles County and Orange County markets that these airports would also draw from in 2035. Also, previous RADAM modeling showed that Ontario Airport barely reached its 31.6 MAP capacity constraint in the Constrained Scenario, and could easily fall below this number using different modeling assumptions. These adjustments result in a slight re-allocation of the forecast demand for the Baseline Scenario compared to the 2008 RTP Constrained Scenario.

2. Low Growth Scenario (130 MAP)

The 130 MAP total assumed for the 2035 Low Growth scenario is not based on any past modeling, and is lower than any regional aviation scenario modeled for previous RTPs, including 2020 forecasts for the 1998 RTP. It is viewed by ATAC to represent a reasonable low end of the range of possible regional aviation demand futures. The demand allocation for this scenario assumes that the constrained urban airports (LAX, Bob Hope, Long Beach and John Wayne) would still reach their capacity constraints, and allocation of the remaining passenger demand (26.7 MAP) to the other airports would be based on their proportional shares in the Baseline Scenario.

3. High Growth Scenario (164 MAP)

The 2035 High Growth Scenario represents an extrapolation of the 2030 FAA Terminal Area Forecast (TAF) for air carrier airports in the region (3.0% growth rate per annum). The TAF is an unconstrained econometric forecast for established air carrier airports, based on historical trends as reported by the airports themselves. The 2030 TAF for LAX, Long Beach, Burbank and John Wayne airports exceeds their legally-enforceable or physical capacity constraints by significant margins. At 164 MAP, the High Growth Scenario is slightly below the 165.3 MAP forecast of the 2035 Preferred Scenario adopted for the 2008 RTP. Like all

the other regional aviation demand scenarios modeled for the 2008 RTP, the Preferred Scenario respected legally-enforceable policy constraints and physical capacity constraints at the urban air carrier airports, as well as estimated capacity constraints at Ontario Airport (runway capacity) and March Inland Port (civilian operations allowed by the joint use agreement with the Air Force). It assumed much more willingness on the part of the airlines to invest in new flights at new and emerging airports than in the Constrained Scenario, and a package of market and ground access incentives. It also assumed an abbreviated version of a proposed intra-regional high-speed rail (maglev) system, running from West Los Angeles to Ontario Airport, and extending west to LAX and east to San Bernardino International. The airport demand allocations for the High Growth Scenario are not based on any modeling that incorporated these assumptions, but are based on an assumption that LAX, Bob Hope, Long Beach, John Wayne, Ontario and March will all reach their capacity constraints by 2035. The residual demand of the 164 MAP forecast (26.6 MAP) was allocated to the remaining airports based on their proportional shares in the Baseline Scenario.

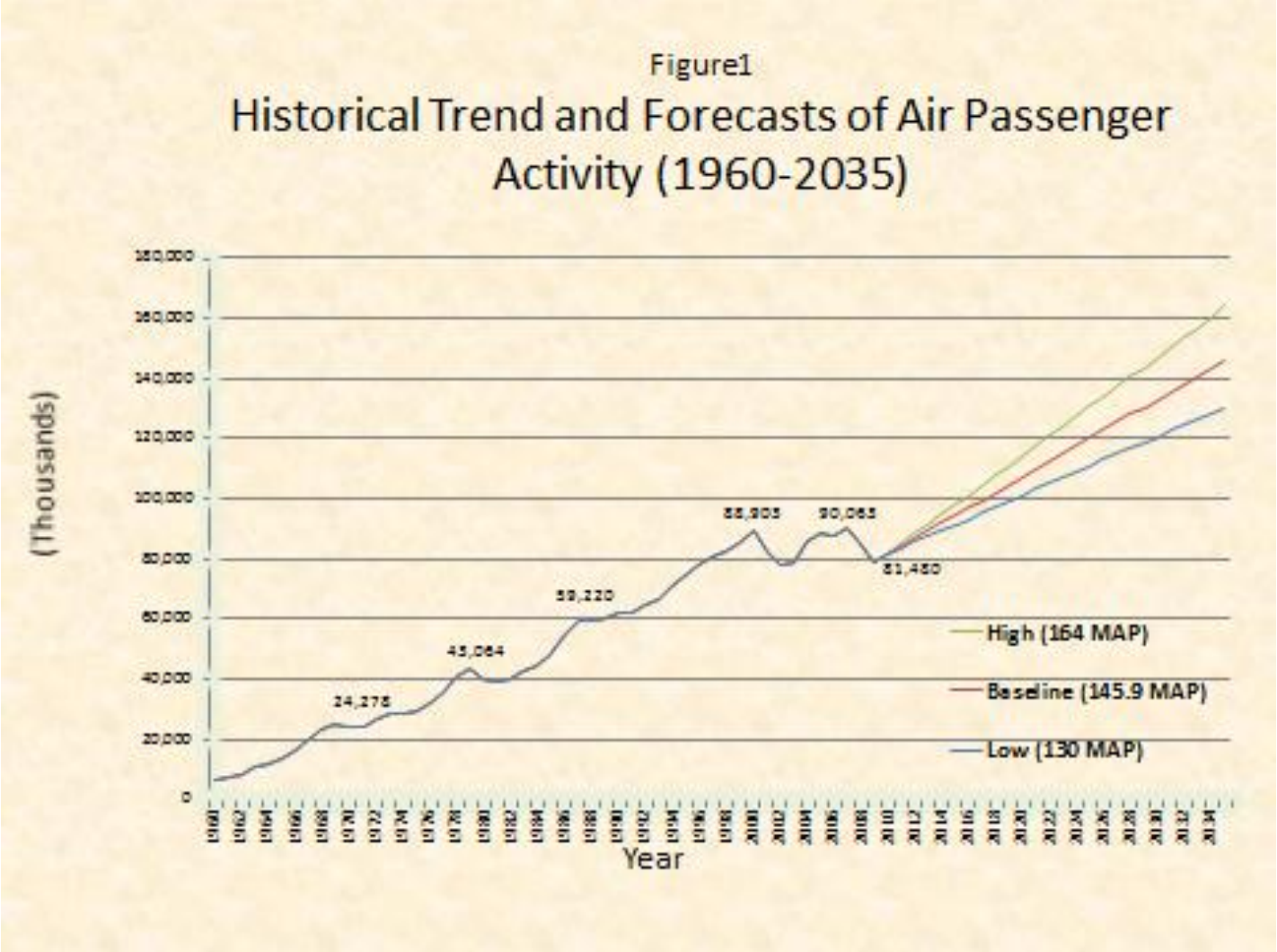
The relative airport allocations between the Baseline/Medium Growth, High Growth and Low Growth scenarios are shown in Table 1 below.

Table1

Airport Forecasts (2035)
(million annual air passengers)

	Low	Baseline	High
Bob Hope	9.4	9.4	9.4
John Wayne	10.8	10.8	10.8
LAX	78.9	78.9	78.9
Long Beach	4.2	4.2	4.2
March Inland Port	0.4	0.6	2.5
Ontario	19.2	30.7	31.6
Palmdale	1.6	2.6	6.1
Palm Springs	2.6	4.1	9.6
San Bernardino	1.8	2.8	6.7
SoCal Logistics	0.4	0.7	1.6
Imperial	0.6	0.9	2.1
Oxnard	0.1	0.2	0.5
TOTAL	**130**	**145.9**	**164**

Figure 1 below shows the three forecast scenarios in relation to historical air passenger trends in the region since 1960.



ATAC RECOMMENDATION

At its last meeting on September 22, 2011, the SCAG Aviation Technical Advisory Committee recommended the Baseline/Medium Growth Scenario to serve as the Preferred Regional Air Passenger Demand Forecast for the 2012 RTP. However, it did so only after a spirited debate over the reasonableness and feasibility of the scenario, and only after attaching the following caveats to the recommendation:

- The Baseline/Medium Growth Forecast seems to be reasonable in that it is consistent with the 2008 RTP Constrained Scenario, which is based on conservative assumptions that are consistent with recent trends. However, the forecast is based on a number of variables that history has shown can

change significantly over time, and it is important to update the forecast on an ongoing basis, most importantly for the next (2016) RTP.

- The forecast does not consider the potential impacts of the California High-Speed Rail Project on future regional aviation demand generation and allocation to airports. Future forecast updates should incorporate these potential impacts if and when the project is underway, and has a reasonably achievable implementation schedule.
- The forecast recognizes defined legally-enforceable and physical capacity constraints at the constrained urban airports including LAX, Bob Hope, Long Beach and John Wayne. However, it does not recognize the fact that the settlement agreements at both LAX and John Wayne airports expire in the 2015-2020 time period. Relaxation or elimination of the settlement agreement constraints at these airports could significantly impact forecast allocations of aviation demand at other airport in the regional system. Future updates of the forecast, such as for the 2016 RTP, should incorporate any new information provided by local airport authorities on revised constraints at capacity-constrained airports.

If adopted for the 2012 RTP, the 2035 Baseline Scenario would represent a continuation of repeated downward adjustments of annual growth rates underlying regional aviation demand forecasts prepared by SCAG over the last 14 years, in response to new and unfolding economic and market conditions. Below is a comparison of the 2035 Baseline Scenarios to adopted regional aviation demand forecasts in past SCAG RTPs.

- 1998 RTP—157.4 MAP in 2020
- 2001 RTP—167 MAP in 2025
- 2004 RTP—170 MAP in 2030
- 2008 RTP—165.3 MAP in 2035
- 2012 RTP—145.9 MAP in 2035 (Baseline Scenario)

IGT THE INTERNATIONAL GROUP TECHNOLOGIES, INC.
AN INFRASTRUCTURE COMPANY

Consultant Assistance for SCAG Aviation Program

Regional Aviation Policy Recommendations

Presentation to
2012 Regional Transportation Plan Subcommittee
Transportation Committee
October 7, 2011

Geoffrey Gosling
Aviation System Consulting, LLC

Aviation System Consulting, LLC

TranSystems EXPERIENCE | Transportation

DMR CONSULTING

Outline

- Identification of Regional Aviation Policy Issues
- Regional Aviation Policy Issue Papers
- Recent Trends in Regional Aviation Activity
- Key Policy Issues Arising from Recent Trends in Regional Aviation Activity
- Potential Policy Recommendations
- Discussion

Identification of Regional Aviation Policy Issues

- **Potential Regional Aviation Policy Issues Discussed at Aviation Technical Advisory Committee (ATAC) Meetings**
  - **Policy Issues Identified in ATAC Discussions Reviewed at August meeting of RTP Subcommittee**
- **A Set of Policy Issue Papers are being Prepared to Provide More Background on the Issues**
  - **First paper on issues related to regional aviation demand presented at September ATAC meeting and currently being reviewed by ATAC membership**

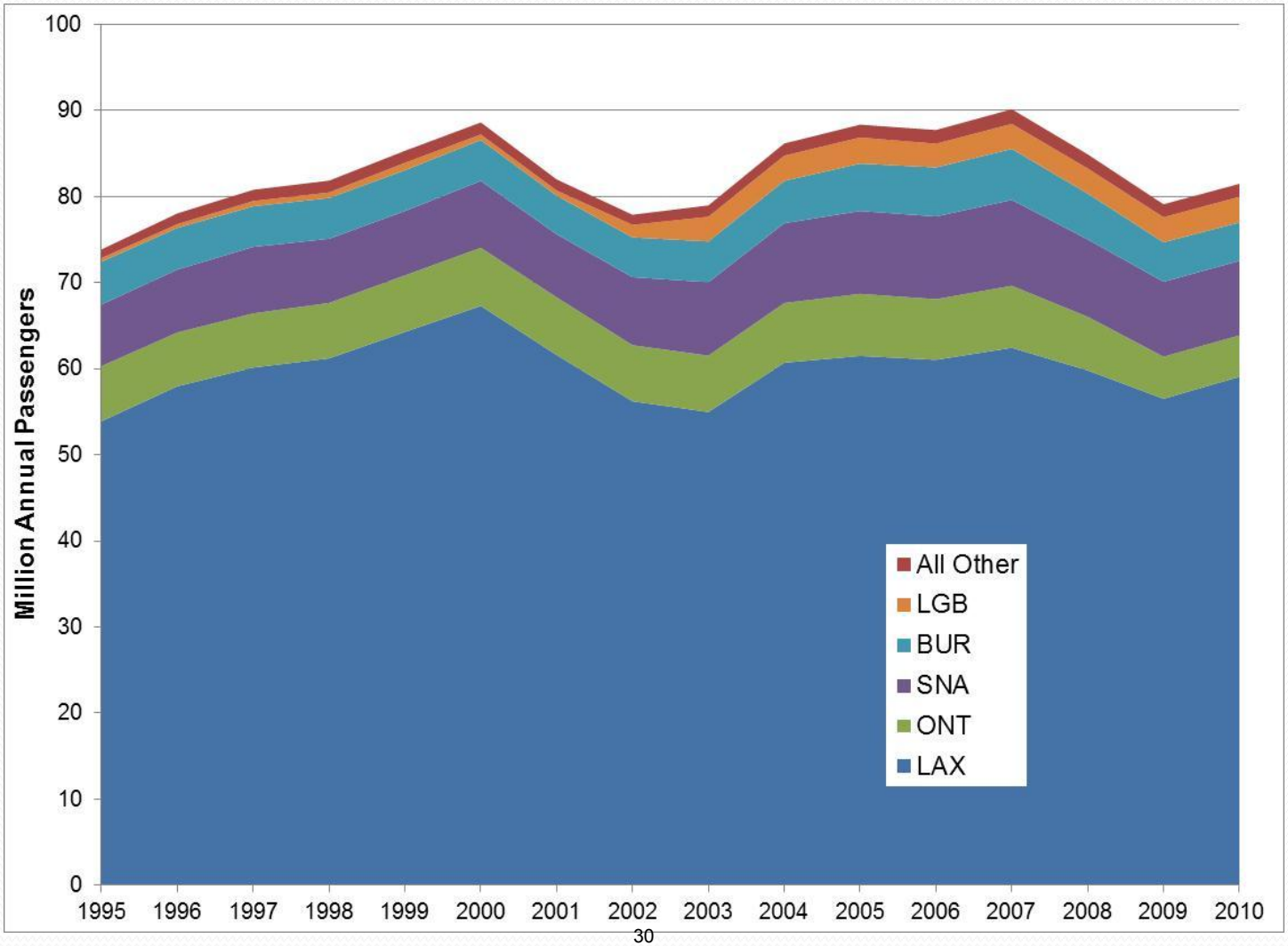
Regional Aviation Policy Issue Papers

- **Provide Input to ATAC and SCAG Staff in Defining Recommended Regional Policies to Include in the Regional Transportation Plan**
- **Development of Policy Issue Discussion Papers**
  - **Regional Aviation Demand Forecasts**
  - ***Airport Economics, Finance and Ground Access Project Funding***
  - ***Airport Land Use Compatibility and Environmental Impacts***
  - ***Airspace Planning and New Air Traffic Technologies***

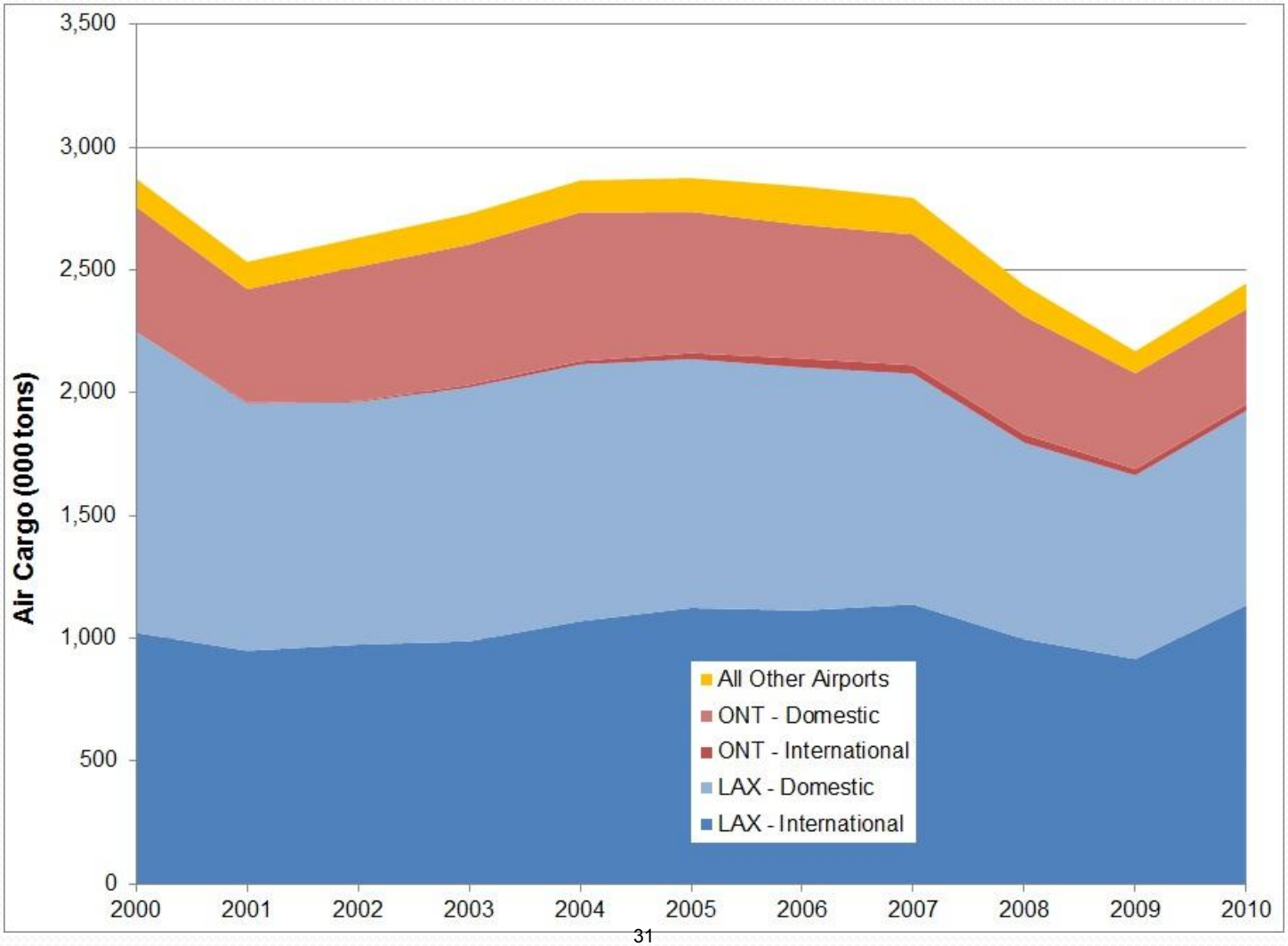
Recent Trends in Regional Aviation Activity

- Establishes the Context for Discussion of Regional Aviation Policy Issues
- Components of Aviation Activity
  - Air Passenger Activity
  - Air Cargo Activity
  - General Aviation Activity

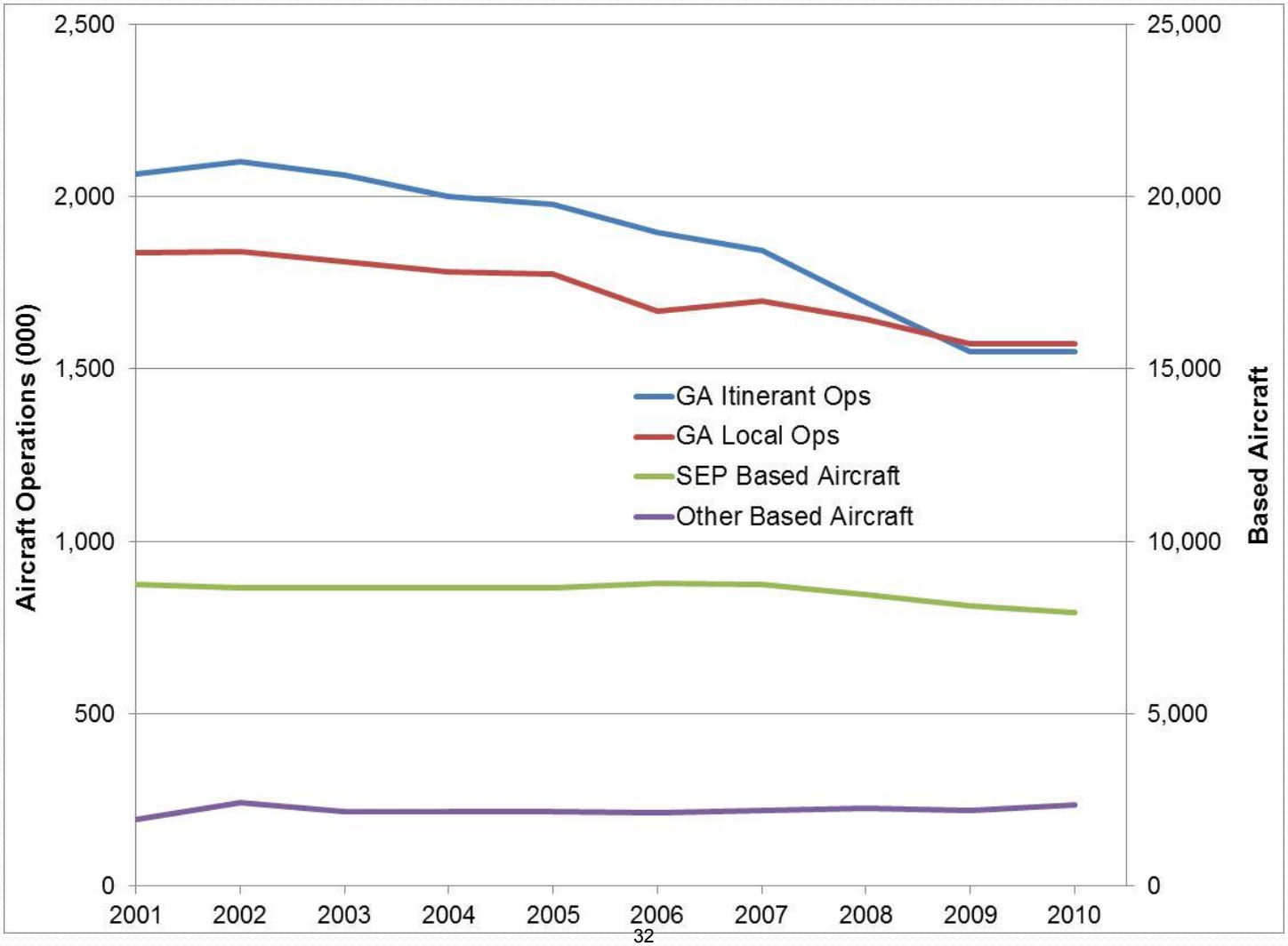
Air Passenger Activity



Air Cargo Activity



General Aviation Activity



Key Policy Issues Arising from Recent Trends in Regional Aviation Activity

- **Allocation of Forecast Regional Demand to Airports in the Regional Transportation Plan**
  - **Need to account for market forces and constraints at congested airports**
- **Incentives to Encourage Airlines to Increase Service at Uncongested Secondary Airports**
- **Support for Secondary Airports to Preserve Future Capabilities**

Allocation of Forecast Regional Demand to Airports

- **Forms a Key Element of the Regional Aviation Forecasting Process**
  - **Needs to reflect economic and operational realities of how airlines decide which airports to serve**
  - **Needs to be responsive to policy actions and project implementation decisions**
- **Highly Desirable for SCAG to Develop an In-house Modeling Capability**
  - **Provide transparent analysis of policy and project decisions**
  - **Provide linkage to ground transportation models**

Incentives to Encourage Airlines to Add Service at Secondary Airports

- **Motivation and Strategies**
  - **Reduce congestion and delay at constrained airports**
  - **Potential strategies to encourage airlines to expand service at unconstrained airports**
    - **Improve ground access**
    - **Provide financial incentives (subsidy or lower costs)**
- **Current Regulatory Limitations on Ability to Cross-Subsidize Service at Different Airports**
  - **Federal rules on revenue diversion allow cross-subsidy of airports operated by the same airport authority but not joint programs between two airport authorities**

Support for Secondary Airports to Preserve Future Capabilities

- **Motivation**
  - **Need to address economic viability during periods of declining traffic**
    - **Tendency of airlines to reduce service more at secondary airports during periods of reduced regional demand**
  - **Preserve capabilities to accommodate future demand at unconstrained airports**
- **Potential Strategies to Address Loss of Revenue**
  - **Maintain a conservative approach to capital debt**
  - **Pursue development of non-aeronautical revenues**
  - **Joint ownership of congested and secondary airports**

Potential Regional Aviation Policies

Regional Aviation Demand

- **SCAG should work with the region's airport authorities to better define the factors that influence the growth in demand for air travel and the composition of the market**
  - **Need for a regionwide air passenger survey on an ongoing basis**
- **SCAG needs to develop in-house modeling tools to support the development of future forecasts and the allocation of demand to airports**
  - **Responsive to potential actions by airport authorities and others to manage demand**

Potential Regional Aviation Policies (cont.)

Regional Aviation Demand

- **SCAG should establish a regional airport ground access task force to define potential programs and services to improve airport accessibility**
  - **Objectives**
    - **Improve accessibility of uncongested airports**
    - **Reduce vehicle traffic generated by larger airports**
  - **The task force should be actively involved in planning to extend or improve rail services in the region**
  - **The task force should explore and develop potential funding sources to support improvements to regional airport accessibility**

Potential Regional Aviation Policies (cont.)

Regional Aviation Demand

- **SCAG should work to develop a regional consensus on how best to support the development of new air services at uncongested airports**
  - **Identify what funding mechanisms are needed to encourage airlines to provide new air service**
  - **SCAG may need to work for changes in regulations to allow joint programs between airport authorities**
- **SCAG should work with the region's airport authorities and business community to define a region-wide marketing effort to promote alternatives to increased use of congested airports**

Potential Regional Aviation Policies (cont.)

Airport Economics, Finance and Ground Access Funding

- **SCAG should support efforts by airport operators to develop strategic financial plans and explore use of excess property for non-aeronautical uses**
  - **Assist airport operations with information on changing patterns of regional demand**
  - **Serve as a clearinghouse for information on potential non-aeronautical uses**
- **SCAG should coordinate with the region's County Transportation Commissions and other transportation agencies to include joint funding of airport ground access projects identified in the RTP and SCAG's Strategic Plan in those agencies' plans**

Potential Regional Aviation Policies (cont.)

Land Use Compatibility and Environmental Impacts

- **SCAG should coordinate with and support the work of the region's Airport Land Use Commissions**
  - **Provide technical support on anticipated future changes in demand for airport activity**
- **SCAG should serve as a clearinghouse for information on "best practices" by airports on mitigating air, noise and water pollution and reducing greenhouse gas emissions**
- **SCAG should work with the region's airport authorities to develop more rational policy instruments for managing the adverse impacts of aviation activity**

Potential Regional Aviation Policies (cont.)

Airspace Planning and New Air Traffic Technologies

- **SCAG should actively participate in planning efforts by the Federal Aviation Administration and the Southern California Airspace Users Working Group to improve regional airspace capacity and efficiency**
  - **Prove input on forecast future changes in regional demand for aircraft operations**
  - **Pursue opportunities to identify how new navigation and air traffic control technologies can contribute to the region's airspace capacity**
  - **Ensure that airspace constraints are reflected in plans to accommodate regional aviation demand**

Discussion

Aviation System Consulting, LLC
805 Colusa Avenue
Berkeley, CA 94707-1838

Consulting Assistance to SCAG Aviation Program

To: Mike Armstrong, SCAG
From: Geoff Gosling
Date: September 20, 2011
Subject: **Air Cargo Forecasts**

The trend in air cargo activity at the commercial service airports in the SCAG region over the past eleven years is shown in Figure 1.

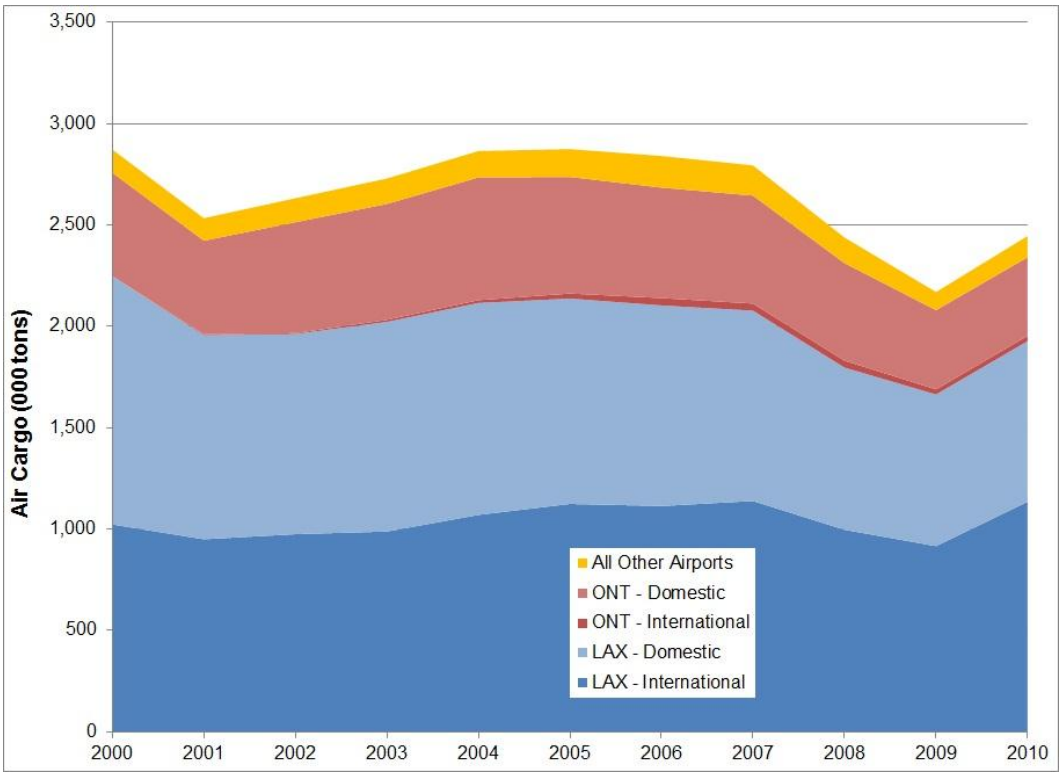


Figure 1 Trend in Air Cargo Activity at SCAG Region Airports

There are a number of aspects to the recent trend in air cargo in the region that become very apparent from the figure:

1. Overall, air cargo activity has been steadily declining over the past decade. While the declines in the 2001 and 2008/2009 recessions have been a major contributor to this, the general trend has still been downward. Following the drop in the 2001 recession, air cargo activity recovered slowly from 2001 to 2004, reaching a level slightly below that in

2000. It then slowly declined from 2004 to 2007, before dropping gain in the 2008/2009 recession. The recovery in 2010 was stronger than that following the 2001 recession and it remains to be seen how long this continues.

2. The decline has been entirely confined to domestic air cargo. International air cargo reached a peak in 2007, declined in 2008 and 2009 with the recession, then recovered in 2010 to slightly below the 2007 peak (the difference is not apparent in the figure). It seems likely that international air cargo will continue to grow in the future, although the traffic for the first seven months of 2011 was about 3% below the level for the corresponding period in 2010.
3. Almost all international air cargo moves through Los Angeles International Airport (LAX). Ontario International Airport (ONT) handles a very small proportion (about 3% in 2010) and the other airports essentially none.
4. LAX and ONT between them handle almost all of the region's air cargo (96% in 2010), The share handled by the other airports combined increased slightly from 2004 to 2007, when DHL was operating a hub at March Inland Port, but has since declined to the level experienced in 2000. There is thus no evidence of a shift toward the smaller airports. In fact, the majority of the air cargo handled by the other airports moves through Bob Hope (2.1% in 2010), Long Beach (1.6% in 2010), and John Wayne (0.6% in 2010). The share handled by the remaining airports combined was significantly less that 0.1% in 2010.

The air cargo figures for the smaller secondary airports included in the top band in Figure 1 may be missing a small amount of international cargo due to the source of the data used for those airports.

Not shown in the above figure is the extent to which the domestic air cargo at LAX and ONT is handled by the integrated carriers. At LAX, FedEx handled 46% of the domestic air cargo in 2010, ABX Air (which provides air service for DHL) handled 7%, and UPS handled 4%, for a 57% market share of the integrated carriers. At ONT, UPS handled 60% of the domestic air cargo in 2010 (market share data is only for January through October) and FedEx handled 32%, for a 92% market share by the integrated carriers.

Of the domestic air cargo at LAX not handled by the integrated carriers, the majority (27% of all domestic air cargo in 2010) was handled by five scheduled airlines: American, Continental, Delta, United and US Airways. A relatively small amount of the remainder was handled by other scheduled airlines (Alaska, Southwest, etc.).

FedEx and UPS handled a trivial share of the international air cargo at LAX in 2010 (a few tons), but UPS handled all the international air cargo at ONT, although this was fairly small, as shown in Figure 1. It should be noted that the distinction between domestic and international cargo relates to the destination of the flight carrying that cargo, not the final destination of the shipment. If FedEx put an international shipment on a flight to its hub at Oakland International Airport (say), where it was put on an international flight, that shipment would be counted as domestic cargo at LAX.

Over 82% of the international air cargo at LAX is handled by scheduled passenger airlines or their cargo divisions that operate freighter aircraft. Obviously, the cargo carried in the belly of passenger flights is not likely to be diverted to other airports, except to the extent that those airports attract addition international service. As a practical matter, the only airport where this is likely to occur to a significant extent is ONT. The other airports may be able to attract some limited international service, particularly to Mexico or Canada, but these flights are unlikely to attract much air cargo. Similarly, the cargo divisions of passenger airlines will want to serve the same airport as the passenger flights, since they share the same ground handling facilities.

Based on the air cargo activity over the past decade, the airport allocations of air cargo shown in the Preliminary 2012 RTP forecasts would appear to require a highly unlikely change from the current distribution pattern. There might be a small shift of international air cargo to ONT if the growth in passenger traffic there results in the addition of some long-haul international flights or if UPS expands its international service out of its ONT hub.

The bottom line is that unless FedEx or UPS decides to relocate one of their hubs, which appears quite unlikely, the only potential air cargo traffic that might be attracted to the smaller airports is that handled by the all-cargo and charter airlines. This was less than 18% of the international air cargo and less than 14% of the domestic air cargo at LAX in 2010. Obviously, not all of this is likely to be diverted to other airports.

This suggests a need to revisit the airport allocation assumptions for the 2035 air cargo forecasts, which imply quite implausible levels of air cargo activity at all the smaller commercial service airports in the region.

2035 Forecast of Total Regional Air Cargo

Analysis of the air cargo forecasts performed by TranSystems for the 2012 RTP update suggests that the growth rates implied by the regional air cargo forecasts in the 2008 RTP (which form the basis of the Preliminary 2012 RTP regional air cargo forecast) are too high in the light of recent trends in the industry. The 2035 forecast region totals for international and domestic air cargo recommended by TranSystems are shown in Table 1.

Table 1 Forecast Total Regional Air Cargo - 2035

	Forecast Scenario		
	Low	Baseline	High
International (000 metric tons)	1,695.4	2,302.9	2,751.2
Domestic (000 metric tons)	2,047.6	2,781.4	3,322.8
	3,743.0	5,084.3	6,074.0
International (000 tons)	1,869.1	2,538.9	3,033.2
Domestic (000 tons)	2,257.5	3,066.5	3,663.4
	4,126.6	5,605.4	6,696.6

Allocation of Regional Air Cargo to Airports

An analysis of the tonnage of LAX air cargo handled by type of carrier in 2010 gave the following breakdown:

Table 2 LAX Air Cargo by Type of Carrier - 2010

	International Freight & Mail	Domestic Freight & Mail
Passenger Airlines	70.7%	29.8%
Cargo Divisions	11.9%	0.0%
Charter Airlines	0.4%	1.6%
Integrated Carriers	0.0%	57.1%
All-Cargo Airlines	17.0%	11.5%

Air cargo handled by charter and all-cargo airlines accounted for a little over 17% of international cargo and about 13% of domestic cargo. While in principle this component of the traffic is "footloose" in the sense that it could use other airports, in practice the ability of this traffic to use other airports is limited by the presence of cargo connecting between domestic and international flights. Even if only some of the cargo on a domestic flight by an all-cargo or charter airline is connecting to or from an international flight, if the flight uses another airport that cargo would have to be trucked to or from LAX. Similarly, some of the international cargo on all-cargo or charter flights is connecting to or from domestic flights, and therefore those flights are likely to be primarily at LAX. Although all-cargo and charter airlines are cost-sensitive, any cost advantage of using a different airport would have to be offset against the cost of trucking the international cargo between the airports. Another constraint on the choice of airport by all-cargo and charter airlines is the location of freight forwarders, which tend to be concentrated in the vicinity of LAX for obvious reasons. In the case of international cargo moving on all-cargo or charter flights, there is also the constraint of needing to clear customs.

In the case of international air cargo on all-cargo or charter flights, a further consideration is that some of this cargo may be moved by truck or rail to from locations outside the Southern California region. From cargo moving by truck or rail into or out of the region, secondary airports outside the urban core may have some advantages as a transshipment location.

Without more detailed analysis that is beyond the scope of the current study, it is unclear how much of the cargo on all-cargo or charter airlines that used LAX in 2010 could potentially be diverted to other airports, but the amount is likely to be fairly small for the foregoing reasons. It is also unclear to what extent the split of air cargo by type of carrier at LAX might change in the future. If air cargo grows faster than passenger traffic, the passenger airlines may not have sufficient belly cargo capacity, leading to an increased use of all-cargo and/ charter airlines. On the other hand, the introduction of larger wide-body aircraft, such as the Airbus A-380, will

increase the belly cargo capacity of passenger flights. It is also possible that the integrated carriers will expand their market share of international freight.

In the absence of any clear basis for assuming a change in the relative market share of different types of carrier, it is assumed that the market shares shown in Table 2 remain in effect in 2035. It is also assumed that only 25% of the domestic cargo handled by all-cargo or charter airlines is potentially divertible to other airports and that in practice only half of the potentially divertible cargo is actually diverted. The basis for the assumption of 25% is that half the domestic cargo is assumed to be connecting to or from international flights and that half of the cargo that is not connecting to or from international flights is moving on flights that include connecting cargo. Because of the potential transshipment advantages of secondary airports outside the urban core for international air cargo, it is assumed that the proportion of international cargo handled by all-cargo or charter flights that is potentially divertible to other airports is somewhat higher than for domestic cargo and that 30% of this cargo is potentially divertible, with only half of this actually diverted.

Of the cargo traffic that is diverted to the smaller secondary airports outside the urban core, those closer to the urban core will have some advantages for cargo that has a shipment origin or destination within the urban area. San Bernardino International Airport (SBD) and March Inland Port are sufficiently close to each other that neither appears likely to have a significant locations advantage over the other. However, Ontario International Airport is even closer to the urban core than either SBD or MIP and will have the further advantage for international cargo of a much larger number of domestic passenger flights for cargo connecting to domestic flights. Therefore the market shares shown in Table 3 have been assumed for the cargo diverted from LAX:

Since the other airports in the region would already have attracted any air cargo that might be diverted from LAX, it is assumed that they would not attract any additional cargo from LAX. All three airports (Bob Hope, John Wayne, and Long Beach) have significant night noise constraints or curfews that would make them unattractive to air cargo operators. Palm Springs International Airport is too far from the urban area to attract any significant amount of cargo that might be diverted from LAX.

Table 3 Market Shares of Air Cargo Diverted from LAX - 2035

	International Cargo	Domestic Cargo
Ontario International	45%	35%
San Bernardino International	20%	25%
March Inland Port	20%	25%
Southern California Logistics	10%	10%
Palmdale Regional	5%	5%

Revised 2035 Air Cargo Forecasts

Based on the revised projections of the total level of regional air cargo traffic and the assumed diversion of air cargo from LAX to ONT and the smaller secondary airports, the forecast level of air cargo activity at each airport has been revised as shown in Table 4.

Table 4 Revised Air Cargo Forecasts by Airport – 2035
(000 tons)

	Scenario		
	Low Growth	Baseline	High Growth
Bob Hope	80	108	130
John Wayne	34	46	55
Los Angeles International	2,685	3,647	4,358
Long Beach	69	94	112
March Inland Port	108	147	176
Ontario International	968	1,314	1,570
Palmdale Regional	25	34	40
Palm Springs International	*(1)*	*(1)*	*(1)*
San Bernardino Int'l	108	146	175
So. California Logistics	50	68	81
	4,127	5,605	6,697

Note: 1. Less than 100 tons

Assessment of Previous RTP Forecasts of Southern California Air Cargo Tonnage to 2035

September 2011

Prepared for:

Southern California Association of Governments

ASSESSMENT OF 2008 RTP AND OTHER SOUTHERN CALIFORNIA AIR CARGO FORECASTS

The SCAG 2008 Regional Transportation Plan (RTP) includes forecasts of annual air cargo tonnage in 2035 for ten Southern California airports: Los Angeles International (LAX), Bob Hope, Ontario International, John Wayne, Long Beach, Palm Springs, March Inland Port, Palmdale Regional, Southern California Logistics (Victorville) and San Bernardino International. The base year for these forecasts is 2006.

These 2008 RTP air cargo forecasts are difficult to appraise because neither the methodology nor the assumptions (e.g., key economic drivers) are available. In any case, the assessment presented in this report indicates that these forecasts are significantly higher than warranted by historical growth patterns and the outlook for the world economy and the economies of the U.S. and Southern California. This Assessment also offers, for comparison, an alternative set of air cargo forecasts to 2035 for Southern California as a whole and for each of the airports for base case, low-end and high-end scenarios. These alternative forecasts represent, in our judgment, a more likely growth path for Southern California (SoCal) air cargo.

MAIN POINTS

1. The base year for the air cargo forecasts of the 2008 RTP was 2006, and the estimated total tonnage, inbound/outbound and international/domestic, was 2.805 million tons. The three sets of forecasts of air cargo tonnage, called "2012 RTP Preliminary Aviation Scenarios," imply the following compound annual growth rates (CAGRs) for the 29-year period, 2006-2035

- High-Growth Scenario - 8.223 million tons; CAGR = 3.8%
- Baseline Scenario - 7.626 million tons; CAGR = 3.5%
- Low-Growth Scenario - 6.057 million tons; CAGR = 2.7%

The air cargo forecast for the Baseline Scenario is assumed to be unchanged from that in the so-called "Constrained Scenario" in the 2008 RTP. The Low-Growth Scenario keeps the air cargo traffic at LAX, Bob Hope, John Wayne and Long Beach airports the same as in the Baseline Scenario and reduces the air cargo traffic at the other airports in proportion to the change in forecast air passenger traffic at those airports between the two Scenarios. The air cargo forecast for the High-Growth Scenario assumes the same air cargo traffic at each airport as in the "Preferred Scenario without High-Speed Regional Transport (HSRT)" in the 2008 RTP, except that the forecast for Palmdale Regional Airport assumes the same air cargo traffic as in the "Preferred Scenario with HSRT Extended Initial Operating Segment" in the 2008 forecast, reflecting the expected service to Palmdale by the planned California High-Speed Rail System.

2. We do not have access to quantitative models that were used to generate the air cargo forecasts for the 2008 RTP, so we can't test the sensitivity to changed assumptions about independent variables or provide updates of the forecasts based on 2007-2011 actual volumes or changes in the economic drivers of air cargo flows. We can, however, use other forecasts of air cargo and historical relationships of air cargo (SoCal in particular) and economic drivers and the outlook for those drivers. For example, Table 1, below, presents U.S. Census data (via the World Institute for Strategic Economic Research (WISER)) on international air cargo tonnage, exports and imports, moving through Southern California airports and aggregate export and import tonnage for all U.S. airports from 2003 through 2010 and for YTD April 2010 and YTD April 2011. SoCal figures are shown graphically in Figure 1. For comparison, Table 1 also

presents indexes of Non-U.S. Real GDP and U.S. Real Disposable Income, variables likely to have a significant impact on air cargo exports and imports, respectively.

Air cargo tonnage trends in Table 1 indicate that over the period 2003-2010, Southern California exports and imports have grown at a slower rate than for the U.S. as a whole. The SoCal share of total U.S. exports and imports (not shown in Table 1) decreased a full percentage point from 13.07 percent in 2003 to 12.07 percent in 2010. For the U.S. as a whole, exports grew at a 5.3 percent annual rate, nearly twice the rate of non-U.S. economic growth. By contrast, over the same period, U.S. air cargo imports grew at a 1.8 percent annual rate, or somewhat less than the 2.1 percent annual growth of U.S. Real Disposable Income. However, since 2006, the base year of the 2008 RTP, the growth rates of export and import air cargo have slowed down significantly, in absolute terms and in relation to economic growth. From 2006 to 2010, non-U.S. economic growth averaged 1.8 percent per year while U.S. air cargo exports averaged 3.0 percent annual growth. On the import side, U.S. Real Disposable Income averaged 1.5 percent annually while air cargo imports actually declined slightly.

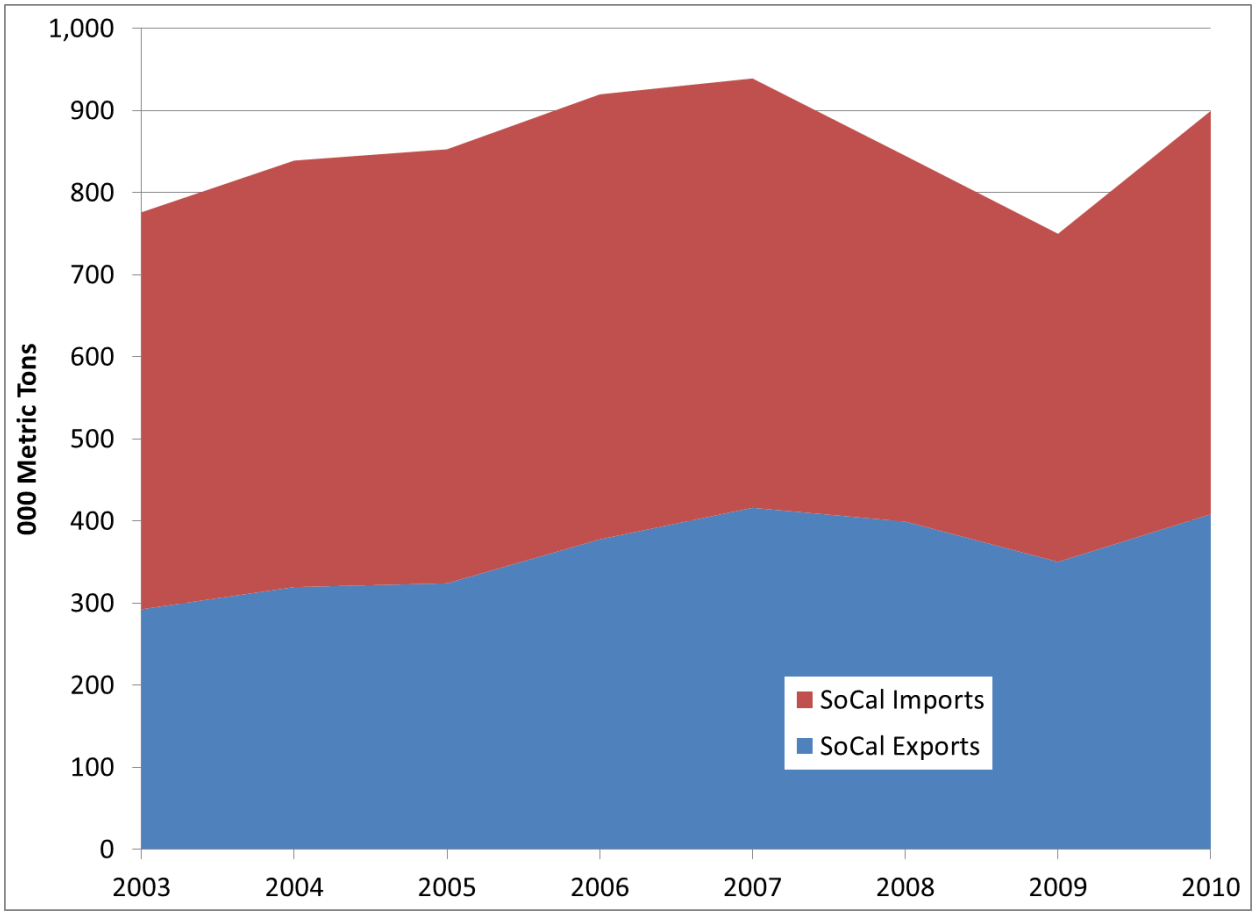
Table 1
U.S. and Southern California Air Cargo Tonnage, Annual 2003-2010, and YTD April 2010 and April 2011 vs. World and U.S. Economic Growth

Year	SoCal Exports (000 MT)	Total U.S. Exports (000 MT)	SoCal Imports (000 MT)	Total U.S. Imports (000 MT)	Non-U.S. Real GDP Index (2003=100)	U.S. Real Disposable Income Index (2003=100)
2003	292.5	2,390.1	483.6	3,548.6	100.0	100.0
2004	319.5	2,693.3	519.6	3,975.0	104.0	103.4
2005	324.1	2,751.8	528.7	3,970.1	107.6	104.7
2006	377.7	3,050.0	542.0	4,079.5	111.9	108.9
2007	416.1	3,375.6	523.0	4,308.0	116.3	111.4
2008	399.3	3,350.3	445.6	3,832.5	118.2	113.3
2009	350.3	2,841.7	399.6	3,194.8	115.7	114.0
2010	408.2	3,432.5	491.4	4,020.1	120.3	115.6
YTD Apr '10	129.4	1,070.7	151.9	1,233.3	-	-
YTD Apr '11	135.8	1,176.0	136.4	1,296.3	-	-
CAGR '03-'10	4.9%	5.3%	0.2%	1.8%	2.7%	2.1%
CAGR '03-'06	8.9%	8.5%	3.9%	4.8%	3.8%	2.9%
CAGR '06-'10	2.0%	3.0%	-2.4%	-0.4%	1.8%	1.5%

Source: WISER Trade Data, July 2011; International Monetary Fund; Moody's Economy.com
Note: MT = metric tons

Table 1 also shows that the rate of decline of the SoCal share of imports and exports is continuing at a faster rate since the base year of the 2006 RTP. In just 4 years, 2006-2010, So Cal share of imports plus exports fell from 12.90 percent to 12.07 percent. In the early part of 2011, the decline in the SoCal share was even steeper: for YTD April 2011, the SoCal share was 11.01 percent, down more than a full point from the 12.21 percent share for YTD April 2010.

Figure 1: Recent Trend in International Air Cargo at Southern California Airports



Less information is available for domestic air cargo, but for SoCal airports, the estimated domestic tonnage for 2006 based on the WISER data was 1.885 million MT and for 2010, 1.525 million MT, a decline of about 19 percent, despite U.S. economic growth over that four-year period of about 6 percent. Overall, it is estimated that total SoCal air cargo declined from 2.805 million MT in 2006 down to 2.425 million MT in 2010, a decline of 14.5 percent, or 3.6 percent per year. In addition, YTD 2011 total tonnage data from LAX (through June 2011) and ONT (through May 2011) indicate that tonnage was flat to declining versus the same period a year ago.

3. For international cargo, we can expect a declining rate of growth over time in relation to overall economic growth as global specialization in production and economic integration reach their full potential. As noted above, from 2003-2010, the ratio of U.S. air cargo export growth to non-U.S. economic growth was nearly 2 to 1, and over the more recent period, 1.65 to 1. For imports, the 2003-2010 ratio of cargo growth to economic growth was less than 1 (0.85) and for 2006-2010, negative. It is likely, however, that the sub-1.0 to negative ratios for imports during this period were anomalous, with an unusually steep slide and unusually slow recovery of air cargo in relation to the U.S. economy, and that the steady-state rate of growth of imports would likely be somewhat faster than overall U.S. economic growth for some time.

Forecasts by the International Monetary Fund and IHS Global Insight, indicate that the rate of growth of non-U.S. economies will average about 2.9 percent for the period 2006 through 2035. Applying a multiplier of 1.5 for air cargo export growth to non-U.S. growth, we get an estimated annual growth rate of 4.35 percent. For imports, Moody's Economy.com estimates an average annual growth rate for the U.S. economy (Real Disposable Income) at about 1.9 percent. Applying a multiplier of 1.1, we get a 2006-2035 import air cargo growth rate of 2.1 percent. The higher multiplier for exports is due to the assumption that the scope for U.S. export penetration into foreign markets is less developed than the penetration of imports from foreign countries into U.S. markets.

If it is further assumed that SoCal airports restore the market share of imports and exports they had in 2006 and SoCal grows at the same rate as that assumed for the U.S. as a whole, then

- SoCal Exports grow from 377,700 MT in 2006 at 4.35 percent per year to **1,298,500 MT** in 2035.
- SoCal Imports grow from 542,000 MT in 2006 at 2.15 percent per year to **1,004,400 MT** in 2035.

For domestic air cargo, it is assumed that growth will tend to approach the rate of U.S. population growth by the end of the forecast period. This assumed relationship of the growth of domestic air freight to population growth is roughly the growth path for less-than-truckload (LTL) truck traffic. For the forecast period in question, 2006 to 2035, U.S. population growth is assumed to average 0.85 percent per year and domestic air cargo, 1.35 percent. Therefore,

- SoCal domestic tonnage will grow from 1,885,300 MT in 2006 to **2,781,400 MT** in 2035.

In sum, total SoCal tonnage is expected to increase from 2.805 MT in 2006 to **5.084 million MT** in 2035. The compound annual growth rate for this forecast is **2.07 percent**.

4. The above forecast is lower than that implied by the recent 20-year forecasts by The Boeing Company, which have a time-frame of 2009-2029. The Boeing forecasts, expressed as CAGRs of tonne-kilometers, include the following tradelane-specific forecast growth rates particularly relevant for the SoCal airports:

- Transpacific - CAGR of 4.8%
- Intra-North America - 2.8%

The estimated blended CAGR applicable to the SoCal airport tonnage growth for the period 2009-2029 is 3.5%.

This was based on the assumptions of (1) a slightly lower growth rate for tonnes vs. tonne-kilometers on the Transpacific trade based on a gradual "western" movement of economic activity over time in the Far East and further west to Indo-China and the Indian Subcontinent, and therefore a growth of the average length of haul for Transpacific cargo; and (2) a growth of California income, employment and industry about equal to the U.S. as a whole. The latter assumption is based on U.S. regional forecasts by Moody's Economy.com.

4. It is estimated that SoCal tonnage declined 22.5 percent from 2.805 million tons in 2006 to 2.175 million tons in 2009, the base year of the Boeing forecasts. Therefore applying the estimated blended CAGR of 3.5 percent to SoCal, we have a forecast of 4.328 million tons for SoCal in 2029. This is close to

the 2029 air cargo tonnage implied by our 2.07 percent CAGR for 2006-2035, which, applied at a constant rate of growth, arrives a 4.495 million MT by 2029.

5. The Boeing assumptions about air cargo growth in North America and the Transpacific for 2009-2029 (and the derived forecasts for SoCal out to 2035) are probably still on the aggressive side. Despite the steep recession in 2009, U.S. GDP and Real Disposable Income grew significantly over the 2006-2010 period and yet domestic air cargo declined. Also, cargo trends at LAX, international plus domestic, are flat over this period, despite both U.S. and Asia economic growth. Plus, as noted earlier, long-run economic growth of the U.S. and overseas is going to be significantly slower over the forecast period (2010-2035) than it has been over the most recent decade, 2000-2010.

6. It has been noted that SoCal has been losing share of international air cargo. One explanation of the flatness in LAX growth is that longer-range aircraft, which used to stop in LAX on Transpacific deployments, can now fly over and go non-stop to/from, say, Dallas-Fort Worth International Airport. If this trend has now played out, then international growth at LAX (and other SoCal airports) can resume on a par with the rest of the U.S. Indeed, according to the assumptions of our forecasts, SoCal share of the international market is restored back up to 2006 levels and grows at the same rate assumed for the U.S. as a whole. Also, domestic air cargo growth, which had been sharply negative since 2006, was assumed to return to the 2006 level by about 2017 and grow from there.

7. Even with what seem to be aggressive assumptions about the growth of air cargo, the forecast shown in point 3, above, of 5.084 million tons by 2035 is well below any of the 2012 RTP Preliminary Aviation Scenarios.

- 38.2% below the High-Growth Scenario
- 33.3% below the Baseline Scenario
- 16.1% below the Low-Growth Scenario

8. In developing a range around the forecast of 5.084 million tons by 2035, it seems appropriate, given the somewhat aggressive nature of the base case forecast in point 3, to establish a limited upside and a substantial downside. The most aggressive aspect of the base case alternative forecast (5.084 million tons by 2035) is that SoCal air cargo will regain its 2006 share of the U.S. In addition, recent sharp increases in fuel prices may endure for the long term and create a permanent additional cost penalty for air cargo (particularly domestic) in relation to over-the-road truck. Based on judgment, the lower-end forecast for SoCal tonnage in 2035 is 3.743 million tons (implies a 1 percent CAGR from 2006) and the higher-end is 6.074 million tons (a 2.7 percent CAGR).

9. In summary, there are material differences between the set of SoCal tonnage forecasts for 2035 under the 2012 RTP Preliminary Aviation Scenarios and those developed under the assumptions and methods used above. It remains to work out the implications for ground traffic.

MEMO

TO: Aviation Technical Advisory Committee

FROM: Michael Armstrong, Aviation Program Manager
Armstron@scag.ca.gov/213-236-1914

SUBJECT: Regional Aviation Policies and Action Steps for 2012 Regional Transportation Plan

DATE: October 27, 2011

BACKGROUND

At previous meetings this year, ATAC has identified and prioritized a number of regional aviation policy issues. Policies and actions steps that address these issues are presented below for consideration by ATAC, to recommend for inclusion in the 2012 RTP. These policies and action steps will provide the basis and foundation for a new Regional Aviation Strategy (RAS) for the 2012 RTP, which will help set priorities for future work for the SCAG aviation program beyond the 2012 Regional Transportation Plan (RTP). The RAS will also be used to set an aviation legislative agenda for SCAG that will guide the SCAG Legislative Committee in developing and taking positions on future state and federal aviation-related legislation.

Regional aviation policies/guiding principles and action steps that were adopted for the 2008 RTP with input from both the SCAG Aviation Task Force and the SCAG Aviation Technical Advisory Committee (ATAC) are listed below. The guiding principles are very general and no longer seem relevant, since they originated from divisive debates over El Toro and who should shoulder the environmental impact burden and derive the economic benefits of serving the then-robust growth in regional aviation demand. It is staff's opinion that all of these guiding principles should be eliminated from the 2012 RTP. Most of the action steps adopted for the 2008 RTP listed below are still relevant, and are included in some form in the policies and action steps recommended for inclusion in the 2012 RTP.

Adopted Aviation Guiding Principles in 2008 RTP

1. Provide for regional capture of economic development opportunities and job growth created by the prospect of significant regional air traffic growth between now and 2035.

2. Distribute maximum opportunity to Southern California airports where population and job growth are expected to be strong and where local communities desire air traffic for economic development.

3. Reflect environmental, environmental justice and local quality of life constraints at existing airports that operate in built-out urban environments.

4. Reflect that each county should have both the obligation and the opportunity to meet its own air traffic needs where feasible.

5. Reflect that the region as a whole has an obligation to help pay the costs of airport environmental mitigation and ground access improvement in counties that serve a disproportionate share of regional air travel demand at their airports.

Adopted Aviation Action Steps in 2008 RTP

1. Support capacity enhancements at existing and potential airports to handle anticipated increases in passengers and cargo volume where it is desired.

2. Mitigate the effects of expanding airports and maximize air passenger and air cargo utilization of outlying airports in less-populated areas so that community impacts are minimized.

3. Support the continued responsibility of SCAG for developing regional aviation and ground access plans for the region.

4. Support the close cooperation between SCAG and other aviation organizations to facilitate the implementation of adopted regional aviation plans prepared by SCAG.

5. Support legislative, marketing and ground access initiatives that promote the decentralization of aviation demand to under-utilized suburban airports where it is desired.

6. Support more flexible use of airport revenues for off-airport ground access projects.

7. Support giving priority to key airport ground access projects in the programming of transportation projects in the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP).

8. Support the development of a regional network of new flyaways that connect to multiple airports via HOV, light rail and commuter rail facilities, to help decentralize aviation demand to under-utilized suburban airports where it is desired.

9. Support efforts to redesign the regional airspace system that may be needed to reduce significant conflicts and delays associated with future air traffic in SCAG's adopted 2035 regional aviation forecast.

10. Support a more active role by the federal government in developing substantial incentives for airlines to upgrade their aircraft fleet to cleaner and quieter aircraft.

RECOMMENDATION

The following policies and action steps are recommended for inclusion in the Regional Aviation Strategy of the 2012 RTP. They are listed by these categories: (1) Regional Aviation Demand, Airport Infrastructure and Airport Ground Access; (2) Airport Economics, Finance and Funding; (3) Airport Land Use Compatibility and Environmental Impacts; and (4) Airspace Planning and New Technologies

I. Regional Aviation Demand, Airport Infrastructure and Airport Ground Access

A. Policies

1. The capability of uncongested secondary airports in the region to accommodate future aviation demand, where such growth is desired, should be preserved during periods of declining or stagnant air traffic

2. Uncongested secondary airports in the region, where additional activity is desired, should be supported through appropriate incentives, marketing, and projects that enhance their capacity and regional accessibility

3. The factors that most influence the growth in demand for air travel and the composition of the market should be identified

4. A regional consensus should be developed on how best to support the development of new air services at uncongested secondary airports, where such growth is desired

5. State-of-the-art aviation demand forecast methodologies should be employed to accurately forecast future aviation demand in the region's complex multi-airport system, and regional aviation demand forecasts should be regularly updated to address changing conditions

6. Existing and planned regional highway and high-occupancy transit improvements should be leveraged to the extent possible to increase the regional accessibility of uncongested secondary airports, where traffic is desired, while minimizing improvement needs

B. Action Steps

1. SCAG should work with the region's airport operators to conduct a region-wide air passenger survey on an ongoing basis, designed to enhance and inform regional aviation demand forecasting and airport marketing efforts

2. SCAG should develop an in-house aviation demand forecasting model that can support the development of future forecasts and allocation of forecast demand to airports in a complex multi-airport regional system. The model should be fully integrated with

SCAG's regional transportation model, and should have airport ground access modeling capabilities

3. SCAG should work with the region's airport operators and business community to define a region-wide marketing effort to promote alternatives to increased use of congested urban airports, consistent with the policy directions of airport operators

4. SCAG should identify and define incentives that airports can effectively use to encourage airlines to provide new air service

5. SCAG should establish a Regional Airport Ground Access Task Force to define potential projects and programs to improve airport accessibility to secondary airports, and reduce vehicular traffic generated by the large urban airports. The Task Force would help plan and promote rail and express bus service improvements and extensions to airports in the region, as well as an integrated regional system of remote air terminals ("FlyAways")

II. Airport Economics, Finance and Funding

A. Policies

1. New funding mechanisms should be identified for implementing regional infrastructure and airport ground access improvements

2. Efforts by airport operators to develop strategic financial plans and explore non-aeronautical revenue-generating use of excess airport property should be supported

3. Strategies that enhance the economic contribution of aviation to the regional economy should be identified and implemented

B. Action Steps

1. SCAG should sponsor and support new legislation that allows for more flexible use of airport revenues for off-airport ground access projects when requested by airport operators

2. The Airport Ground Access Task Force should explore and develop potential new funding sources to support specific projects they have identified for improving regional airport accessibility

3. SCAG should coordinate with the region's County Transportation Commissions and other transportation agencies to include joint funding of airport ground access projects identified in SCAG's Regional Transportation Plan in those agencies' plans

4. SCAG should complete Phase II of the Regional General Aviation Demand Forecast Project, to identify general aviation airports in the region that will likely have excess airport property in the future that could be used for non-aeronautical revenue-generating uses

5. SCAG should sponsor new legislation to allow for excess airport property to be used for revenue-generating non-aeronautical uses, and should coordinate with the Federal Aviation Administration to make appropriate changes in their guidelines concerning non-aeronautical uses

6. SCAG should conduct regional aviation economic impact studies that identify the economic benefits to the region of different types and levels of regional aviation activity, and the likely economic impacts of implementing alternative policy options for serving future regional aviation demand

III. Airport Land Use Compatibility and Environmental Impacts

A. Policies

1. Increased coordination between airport planning and land use planning on both regional and local levels should be promoted

2. Regional support and coordination should be extended to the region's Airport Land Use Commissions

3. Information on aviation environmental "best practices" should be shared and disseminated on a regional level

4. Mechanisms for promoting cleaner and quieter aircraft at the region's airports should be identified and supported

B. Action Steps

1. SCAG should continue to conduct airport "smart growth" projects, using the Airport Smart Growth Framework developed for the Chino Airport Smart Growth Demonstration Project and applying it to different airport settings

2. SCAG should incorporate airport "smart growth" land use principles in land use forecasts used by future regional transportation plans

3. SCAG should periodically conduct information sharing forums for the region's Airport Land Use Commissions in cooperation with the Caltrans Division Aeronautics on "best practices" for airport land use compatibility planning

4. SCAG should serve as a clearinghouse for information on aviation environmental "best practices" by airports for mitigating air, noise and water pollution and reducing greenhouse gas emissions

5. SCAG should sponsor and support new legislation for creating substantial incentives for airlines to upgrade their aircraft fleets to cleaner, quieter aircraft and NextGen-compatible aircraft

IV. Airspace Planning and New Technologies

A. Policies

1. Modifications to the regional airspace system that reduce potential airspace conflicts, increase passenger safety, reduce costs to airlines, and reduce noise and air quality impacts should be identified and promoted

2. Opportunities should be pursued for increasingly the region's airspace capacity, reducing potential future airspace conflicts and increasing airline efficiencies through new navigation and air traffic control technologies

3. Existing and potential future airspace constraints should be incorporated into regional aviation planning

B. Action Steps

1. SCAG should continue to coordinate and provide input to the FAA's Optimization of Airspace and Procedures in the Metroplex (OAPM) Program for Southern California, and similar airspace modernization activities, including updated operational forecasts

2. The SCAG Aviation Technical Advisory Committee (ATAC) should continue and enhane its coordination with the Southern California Airspace Users Working Group (SCAUWG) on airspace issues of regional importance

3. SCAG should continue to advocate that the region should serve as an early "test bed" for the phased implementation of new airspace technologies, including new satellite-based NextGen technologies developed by the FAA, that have the potential to reduce airspace conflicts and reduce noise and air quality impacts on local communities

4. SCAG should explore how new navigation and air traffic control technologies can contribute to the region's airspace capacity, and should incorporate potential airspace constraints in aviation demand forecasts developed for future regional transportation plans